VOL. XLVI. No. 12 DECEMBER 1961

MECCANO MAGAZINE

1/3

IN REMOTE ALASKA

You'll have most fun with MECCANO

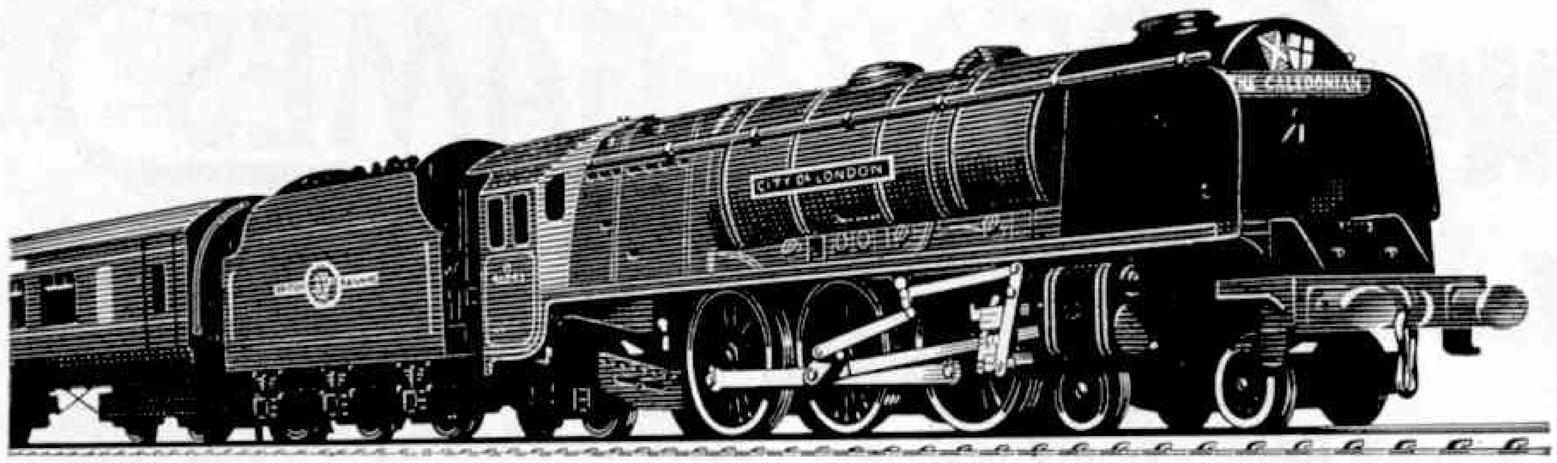
Your Hobby for a Lifetime

Even when a boy begins the Meccano hobby with a small outfit there's always something worth building, and thrills in plenty! Accessory outfits and spare parts can be added by easy stages to build more elaborate models like the Lifting Shovel pictured above. Meccano models are easily dismantled to be rebuilt into something new. No wonder the fun of Meccano lasts through the years.

Outfits from **7/4**

MECCANO

MADE BY MECCANO LIMITED, LIVERPOOL



REALISTIC INTERIOR FITTINGS

PASSENGER COACHES FOR 2-RAIL AND 3-RAIL SYSTEMS

These four super-detail Open Coaches have Polystyrene ends, roofs and underframes, tinprinted sides and die-cast bogie frames. They are well-proportioned, and interior fittings add authenticity to the models.

No. 4060 Open Coach 1st Class W.R., with Interior Fittings.
Length 9¾ in. U.K. Price **16/2**

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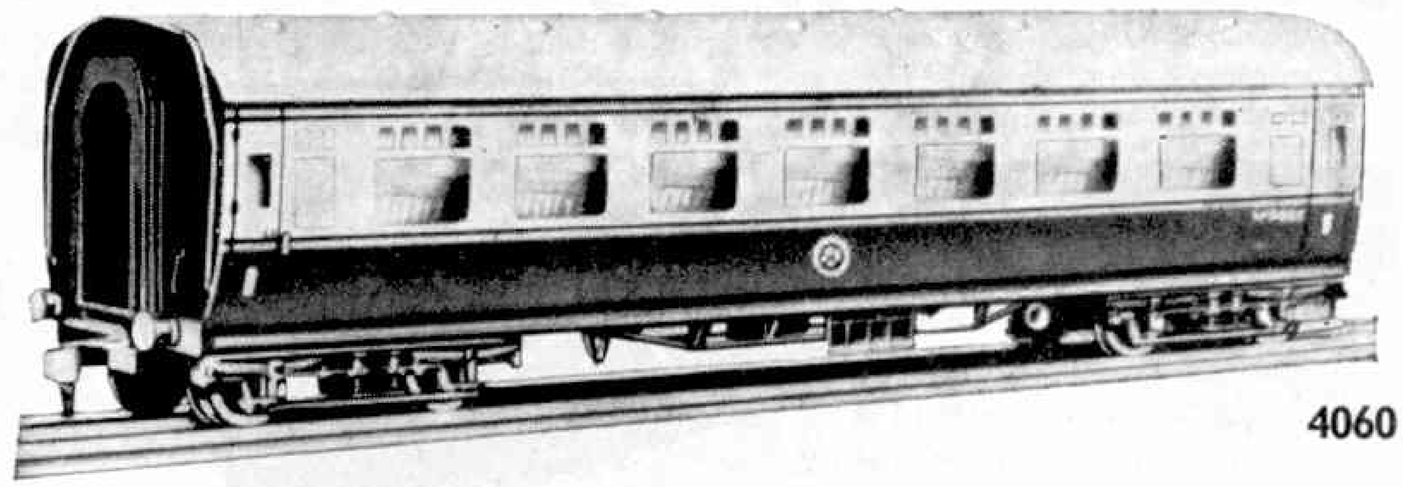
Length 9¾ in. U.K. Price **16/2**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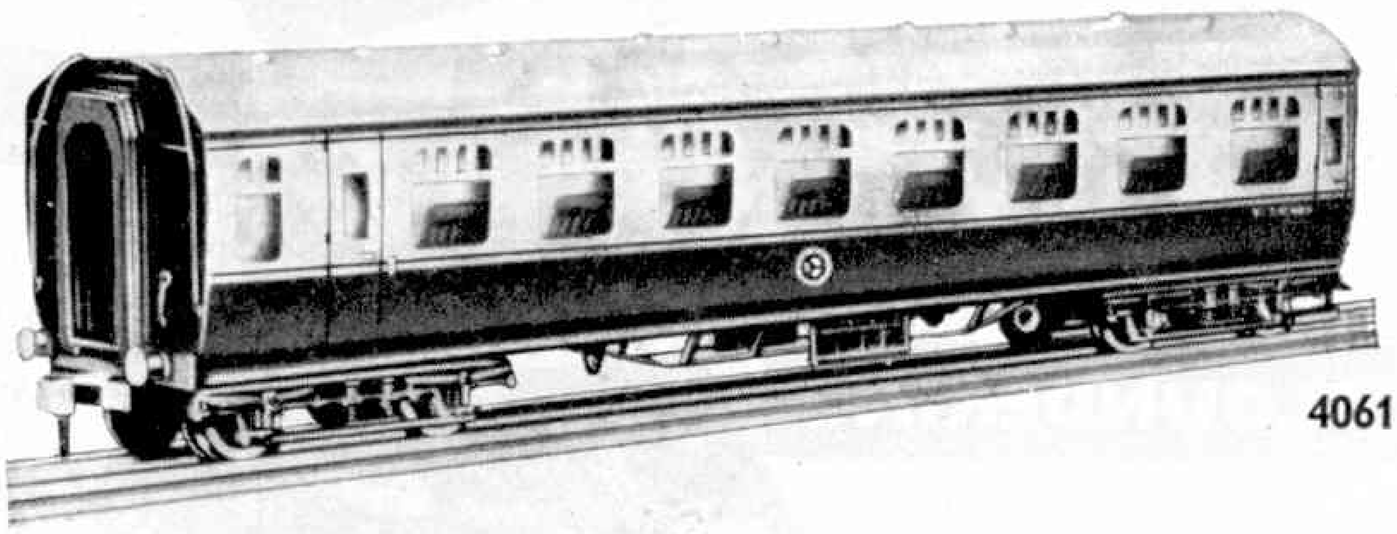
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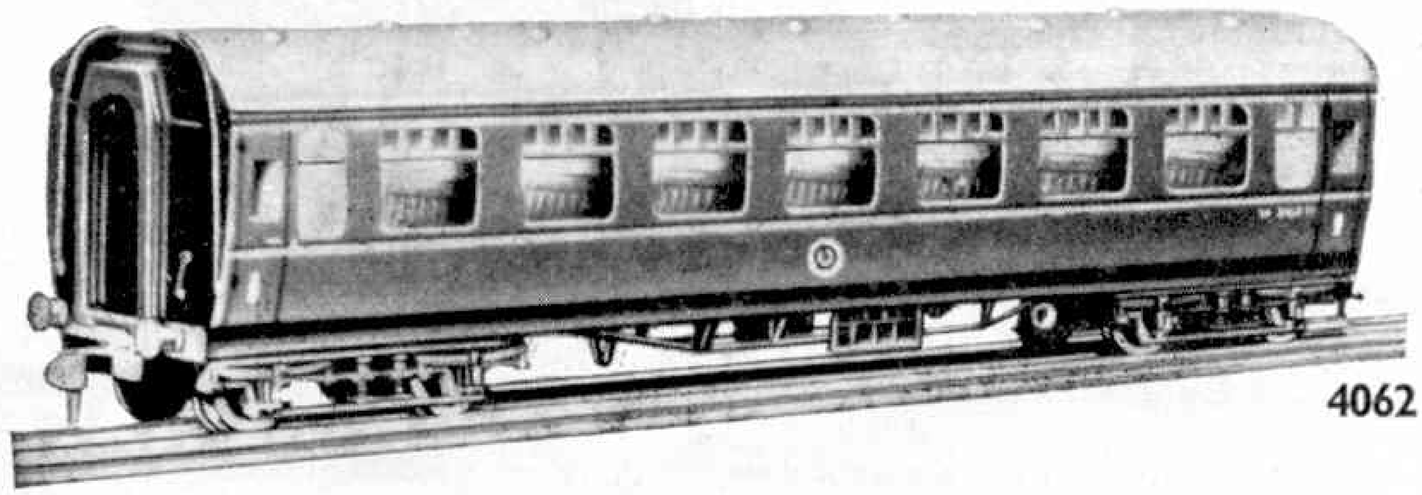
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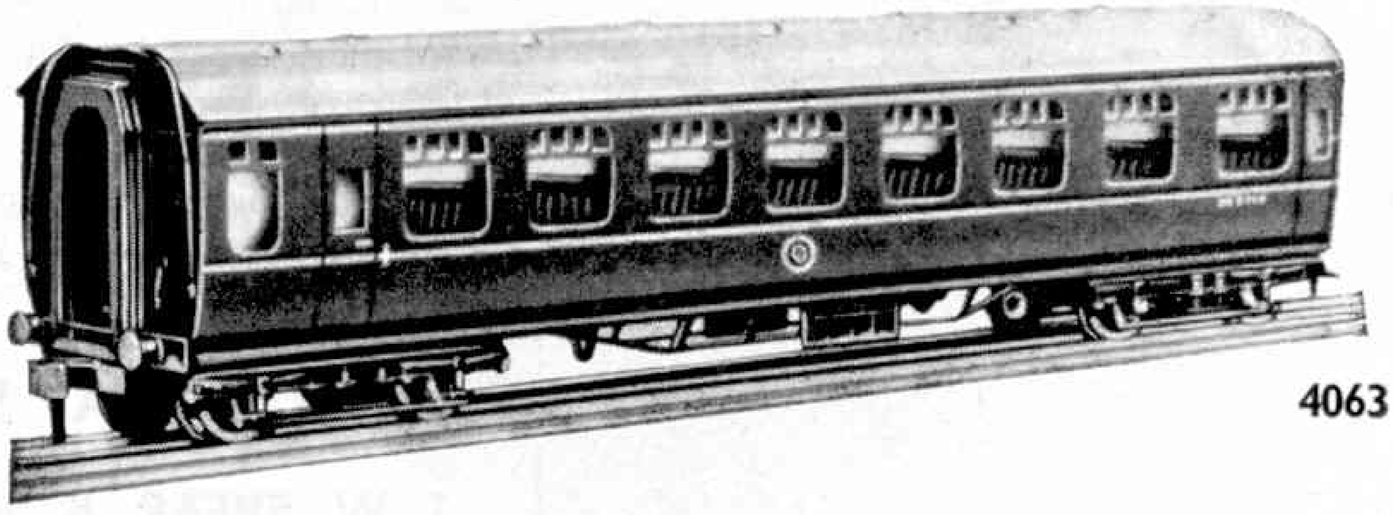
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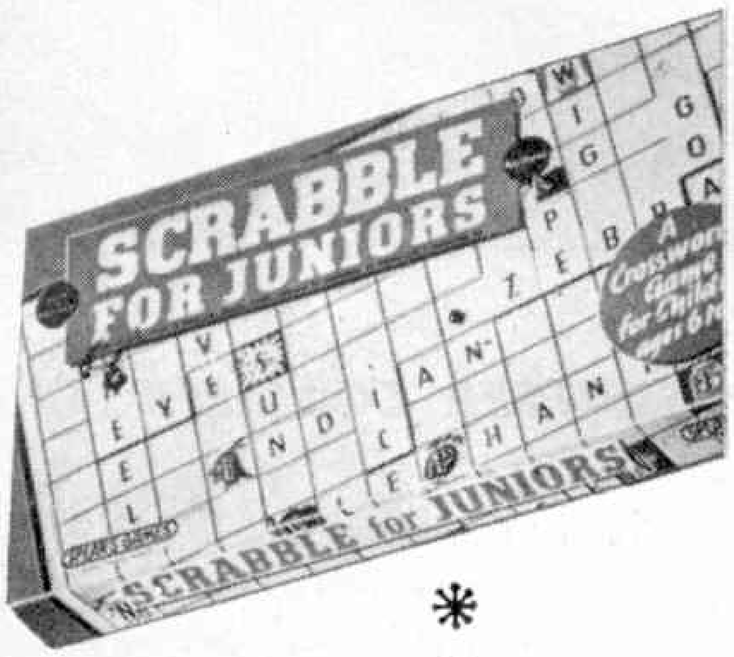

Junior version of the famous word game played by millions. Hours of fun and interest for 2-4 players. Board has two playing sides—one for ages 6-8, the other for 8-10. 10/9

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Extra quiz cards 2/6½ per set of 6.

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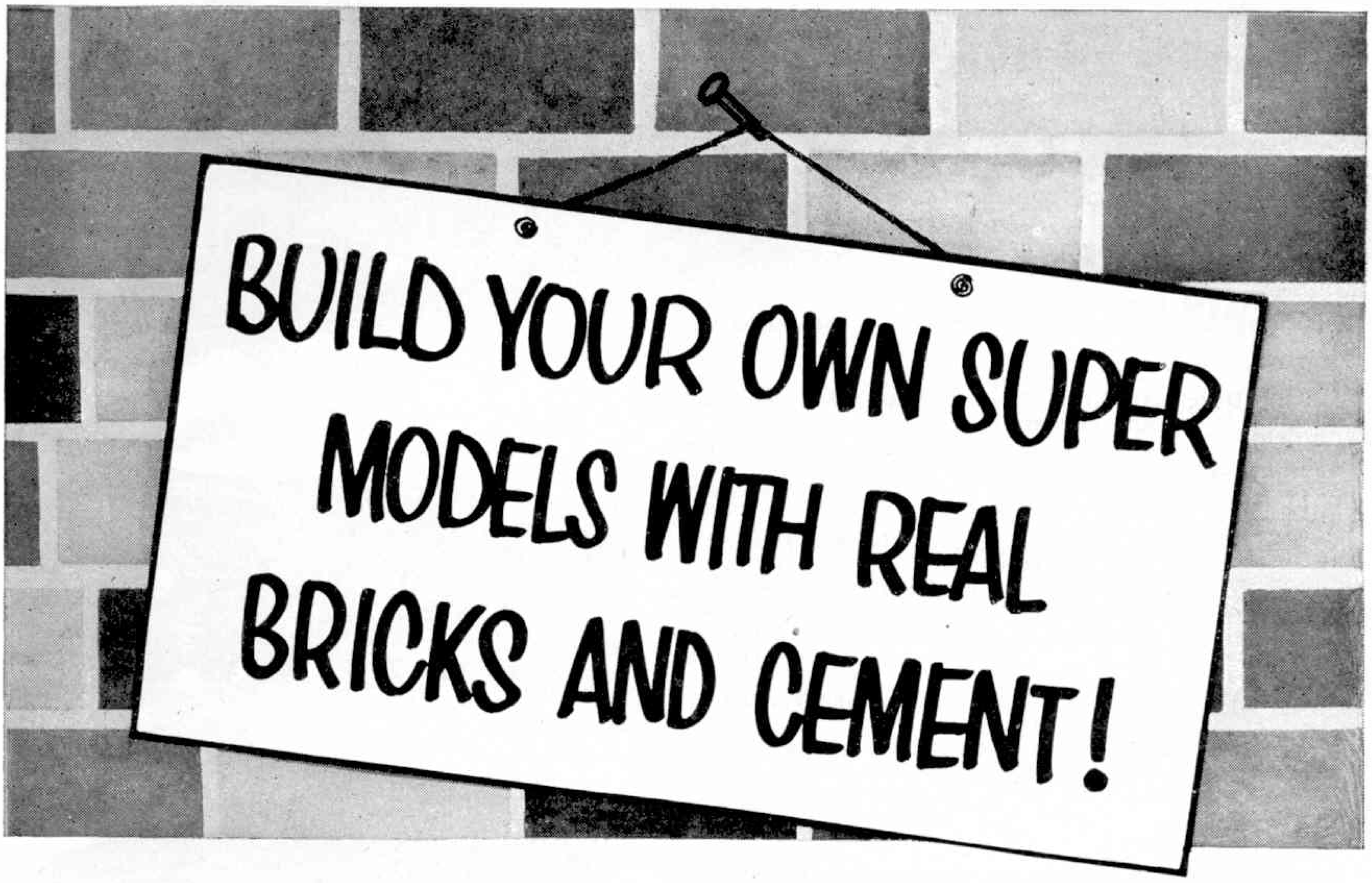

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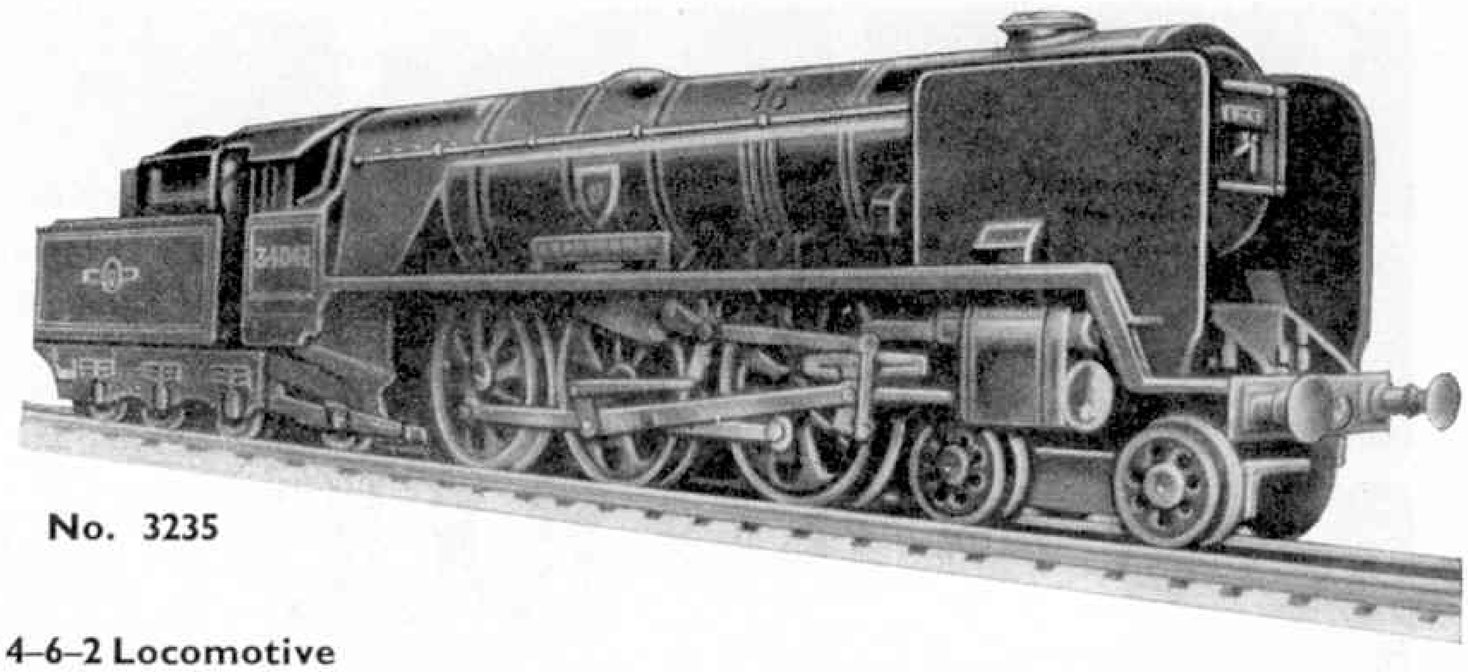

No. 3235

No. 3235 "Dorchester" West Country Class 4–6–2 Locomotive and Tender (Three-Rail)

The Three-Rail version of the rebuilt West Country Locomotive represents No. 34042 "Dorchester". An imposing engine, with characteristic wheels and outside valve motion. Fitted with Ring Field Motor. U.K. Price **£5.16.5**

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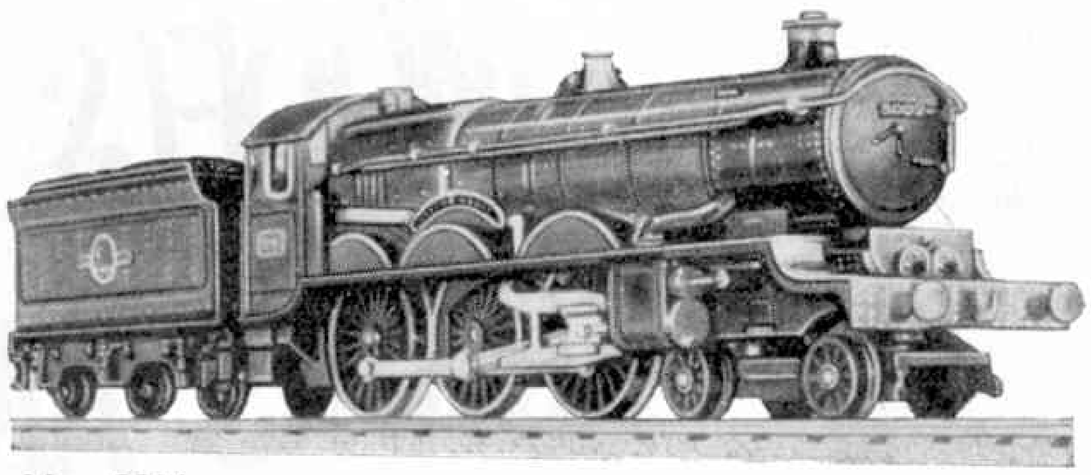
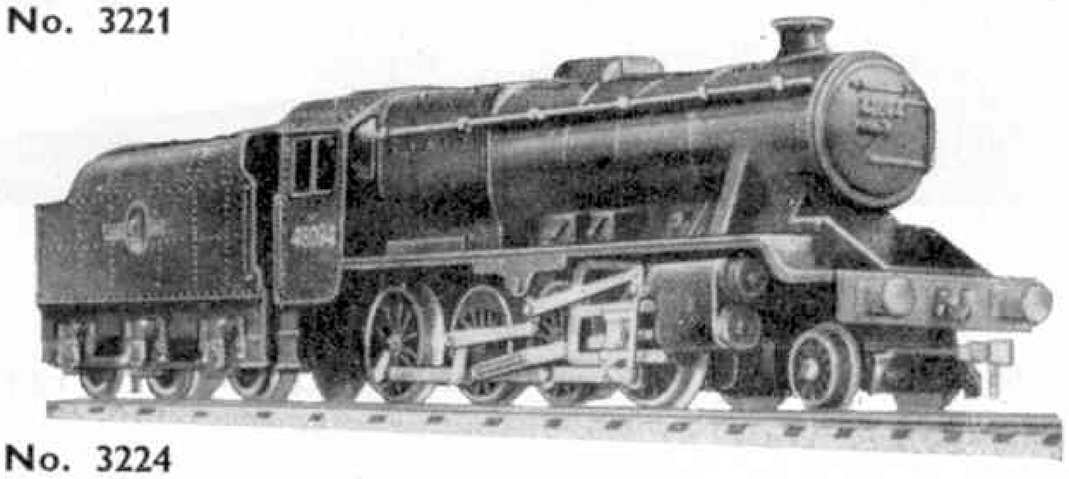


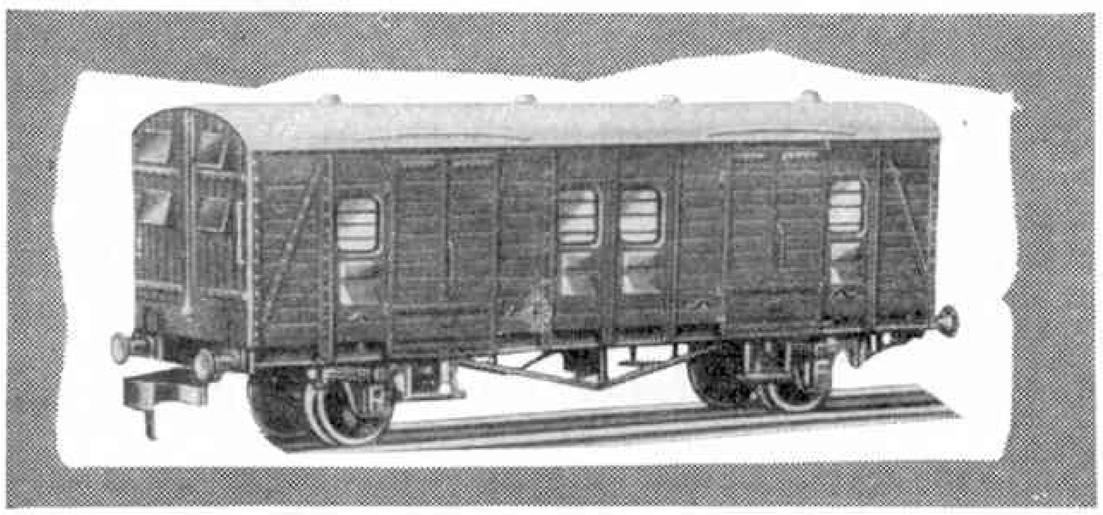
No. 3221

No. 3224 2–8–0 8F Goods Locomotive and Tender (Three-Rail)

This is the latest version of the Hornby-Dublo L.M.R. 2–8–0 in Three-Rail and is fitted with the remarkable Ring Field Motor. The Locomotive and Tender bodies are die-cast in stout metal and the engine now represents L.M.R. No. 48094. U.K. Price **£4.7.7**



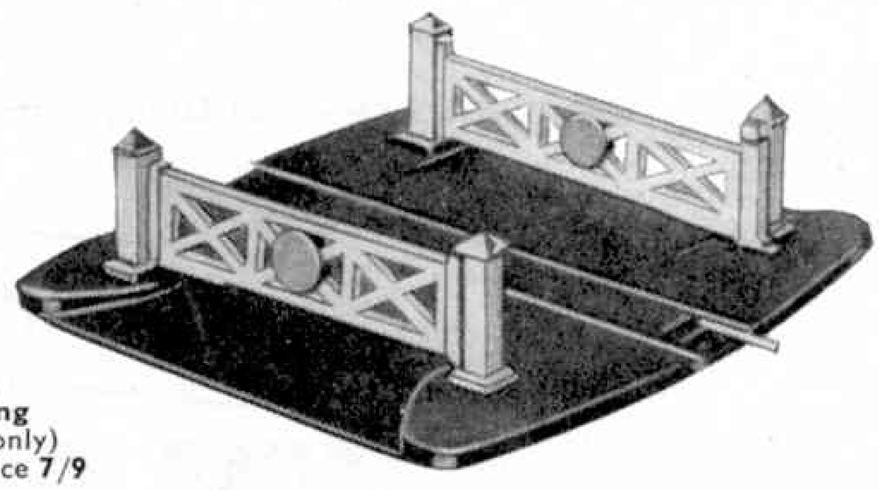
No. 3224



No. 4323 S.R. 4-Wheel Utility Van (Above)

As its name implies, this represents an extremely useful and versatile vehicle, suitable for a wide variety of traffic. Fully detailed, with moulded bodywork, and opening doors in the sides. U.K. Price **12/8**

NEW Accessories



Hornby-Dublo No. 2460 Level Crossing Single Track (2-Rail only) Length 6 in. U.K. Price **7/9**

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Dublo Dinky Toys No. 052 Railway Passengers U.K. Price **4/3**

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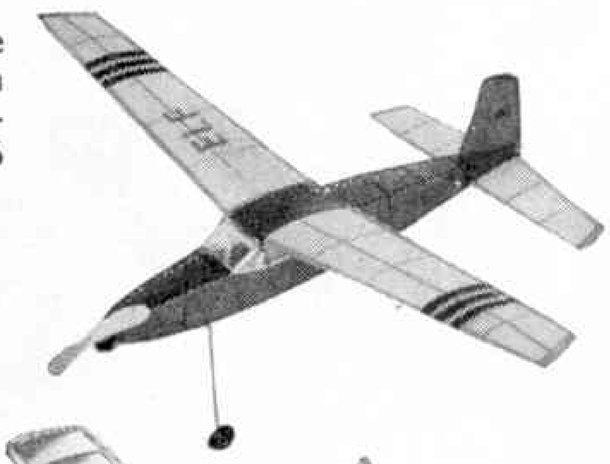

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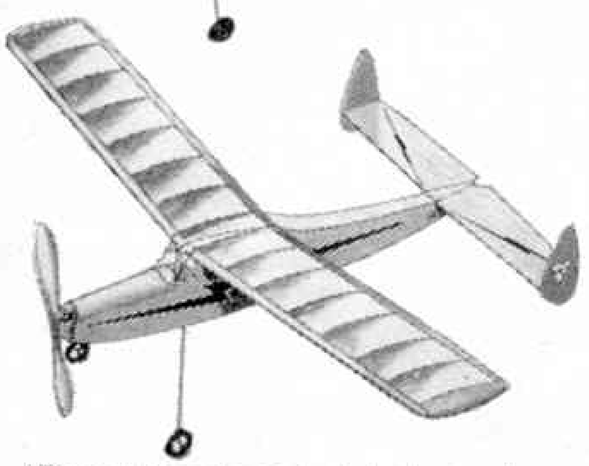

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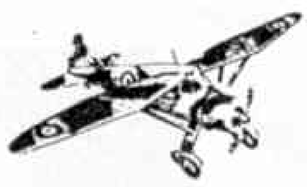
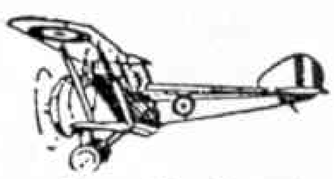


Lysander

Spitfire



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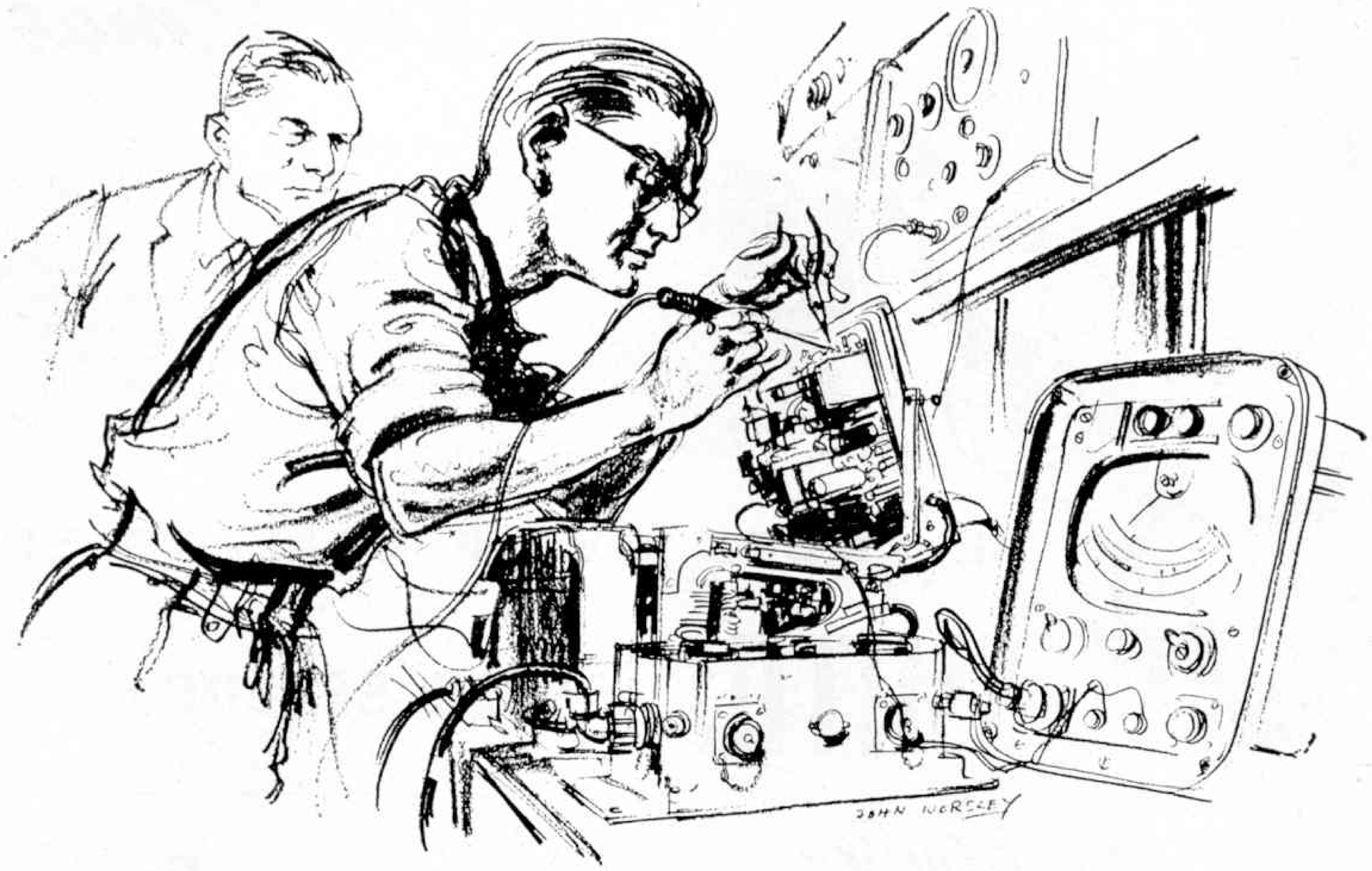

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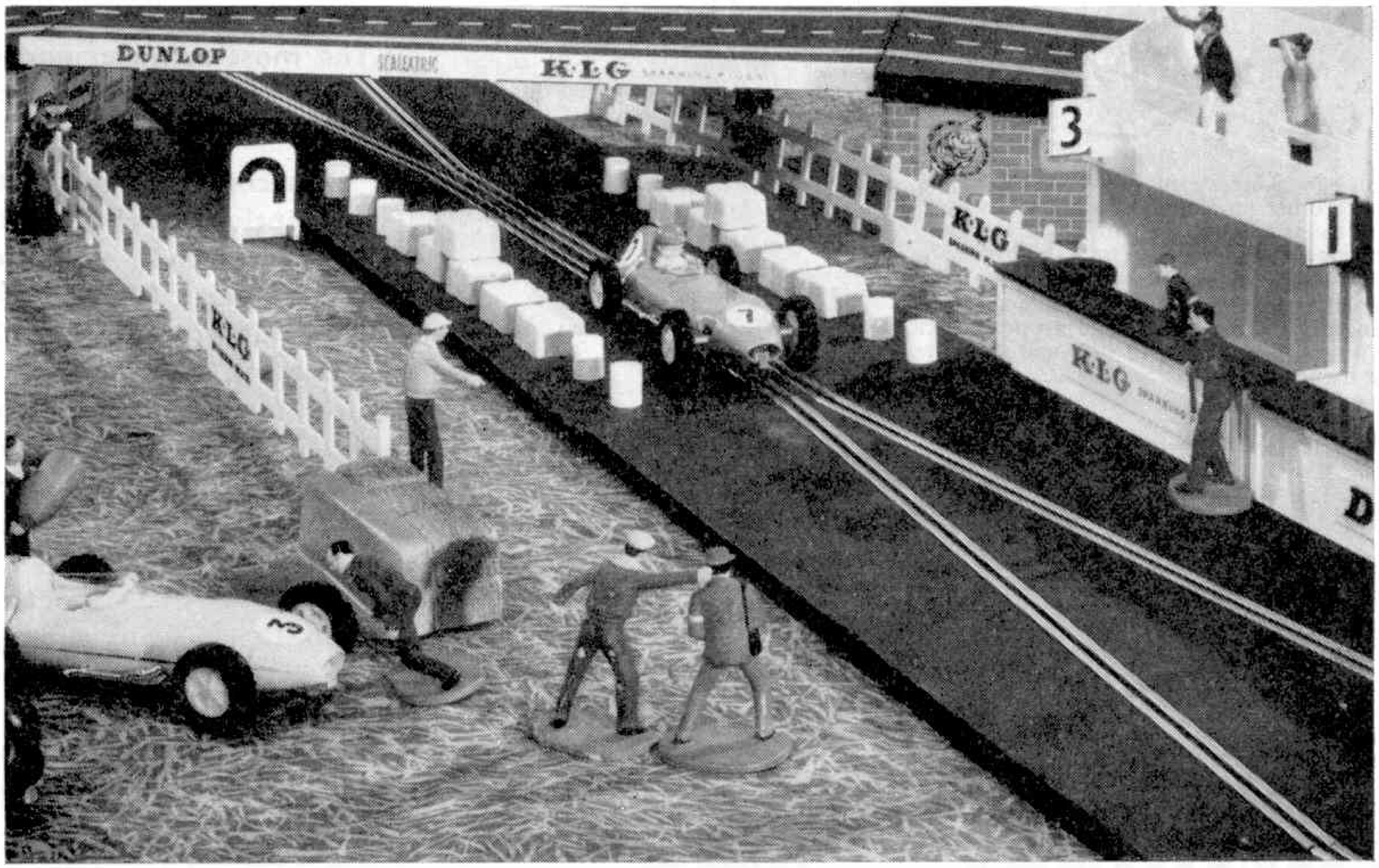

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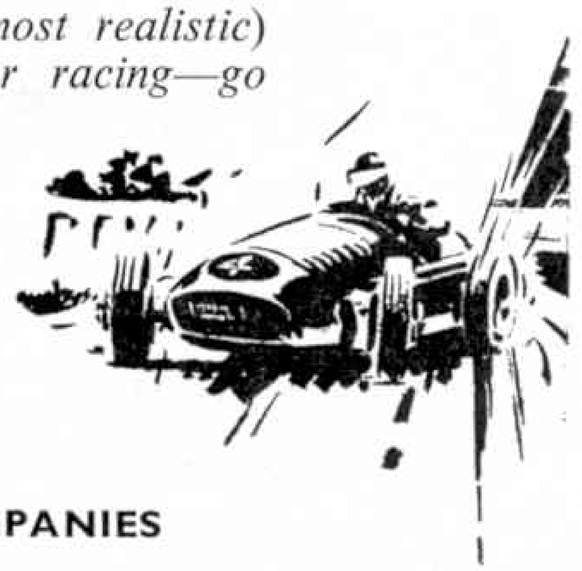

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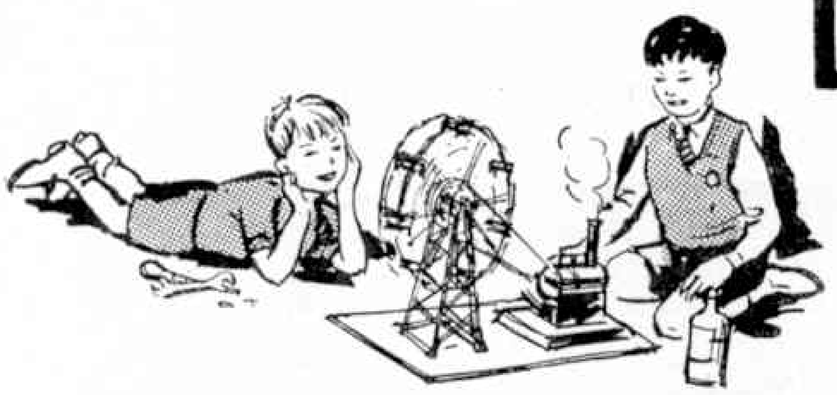

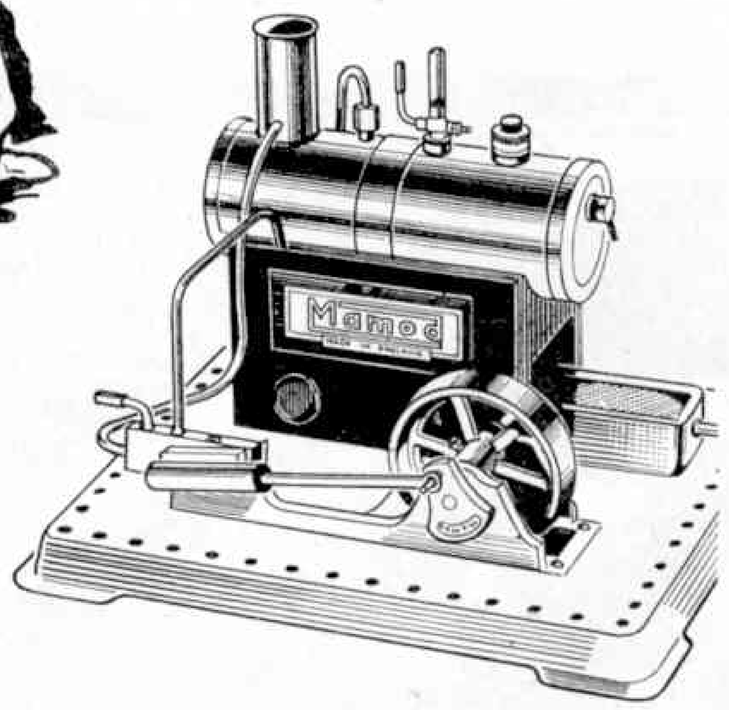

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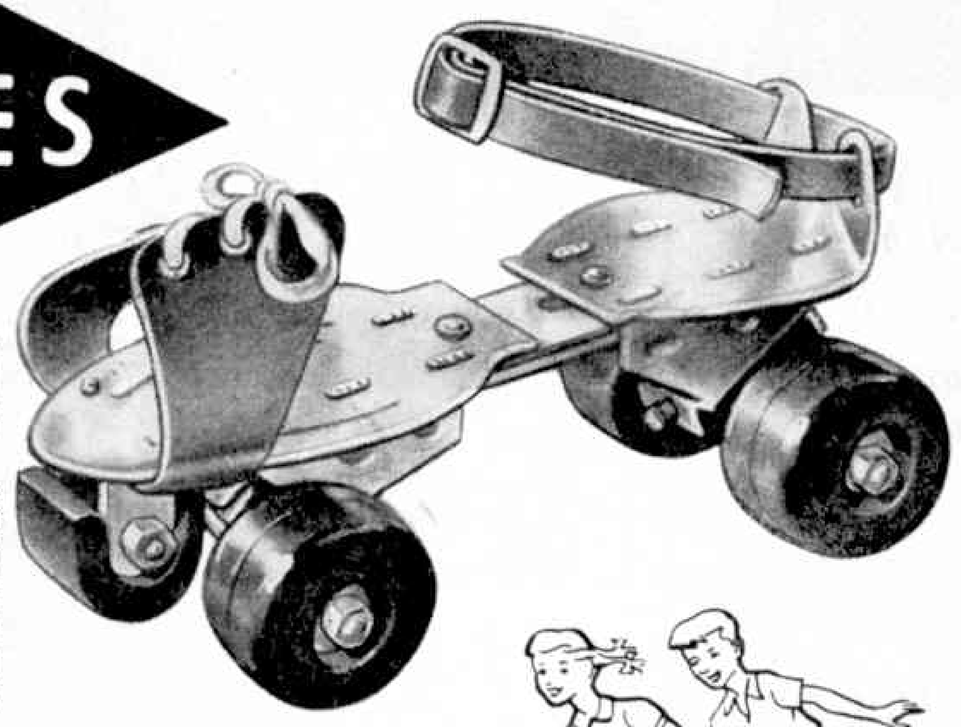

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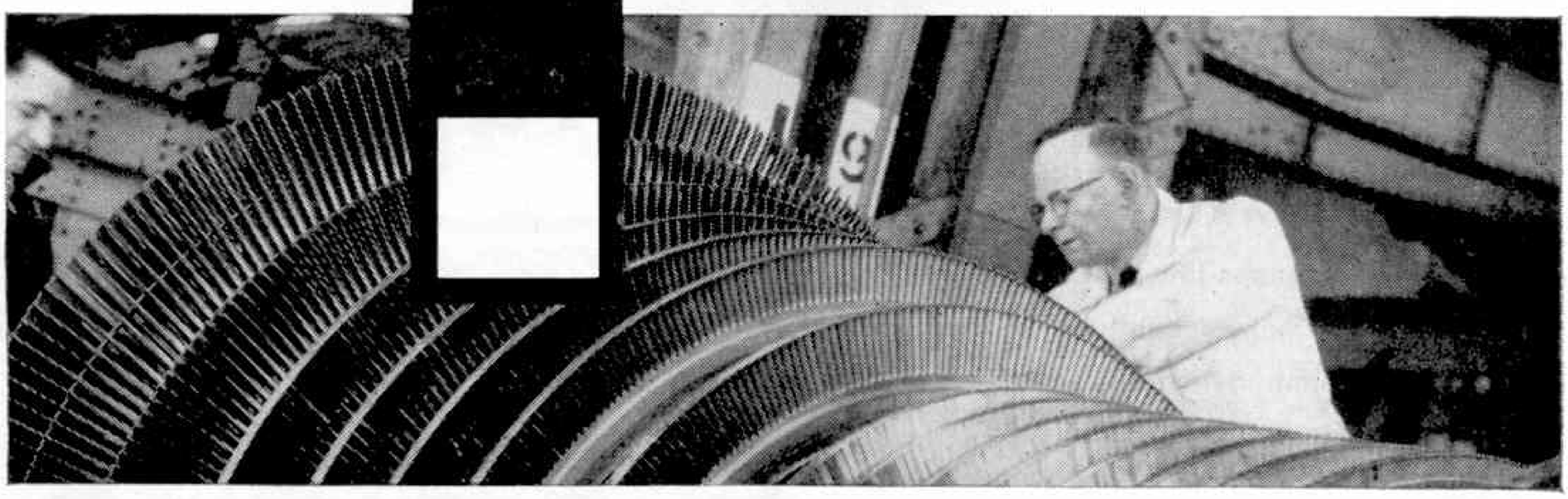

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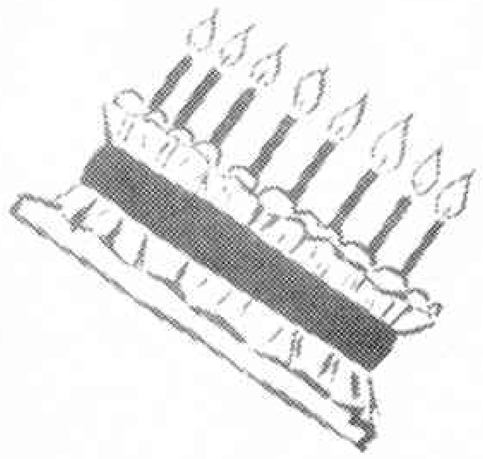

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MECCANO MAGAZINE

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ERNEST MILLER

Greetings For Christmas

THIS year has been an exceptionally busy one in the Editorial offices of the *M.M.*—so much so, in fact, that it seems no time at all since I last sent Christmas wishes to our readers. Now another year has slipped by and we are completing the first twelve months of the new-size *Meccano Magazine*. I would like to thank all who have written to me offering support in this venture, and expressing appreciation of the change in shape and style. I wish them, and all of you who read these pages, a very happy time this Christmas. I shall have many tangible reminders of your goodwill before the month is much older, for at this time of the year wishes reach me from every quarter of the world and Christmas cards arrive in profusion. It is a very sustaining and sobering thought that one has so many friendly contacts with people in all walks of life over many parts of the earth's surface. Long may this friendship continue.

I send my best wishes, too, to the writers who have contributed such a wide variety of articles for these pages during the year. The interest in the topics they have touched upon has been reflected by the number of letters I have received, and I am sure they realise that the average *M.M.* reader is both perceptive about, and deeply interested in, everything that is put before him.

The camera records a scene in the Drawing Office.

This month's picture stems from a visit paid to Binns Road, a few weeks ago, by a film unit from the National Coal Board. They are the team responsible for producing a monthly record, *Mining Review*, now in its fifteenth year. At these Works they traced the progress of the new Hornby-Dublo Rebuilt West Country Class Locomotive *Barnstaple* from the drawing board, through the assembly and enamelling departments, to its final test with a standard load of coaches round one of the Hornby test tracks. Shots taken by the film unit will be included in Issue Number 3 (15th year) of *Mining Review* which will have gone out to the circuits by the time these notes reach you. Although the Hornby-Dublo sequences form only a portion of this particular issue of *Mining Review*, I am sure that any of you who see them on the screen will find them absorbing.

Finally, railway enthusiasts will be interested to know that a Hornby-Dublo Co-Co Diesel has made a non-stop run of 100 miles, with a huge load. Details are on page 431.

THE EDITOR.

Next Month: TRACING A LOST CANAL

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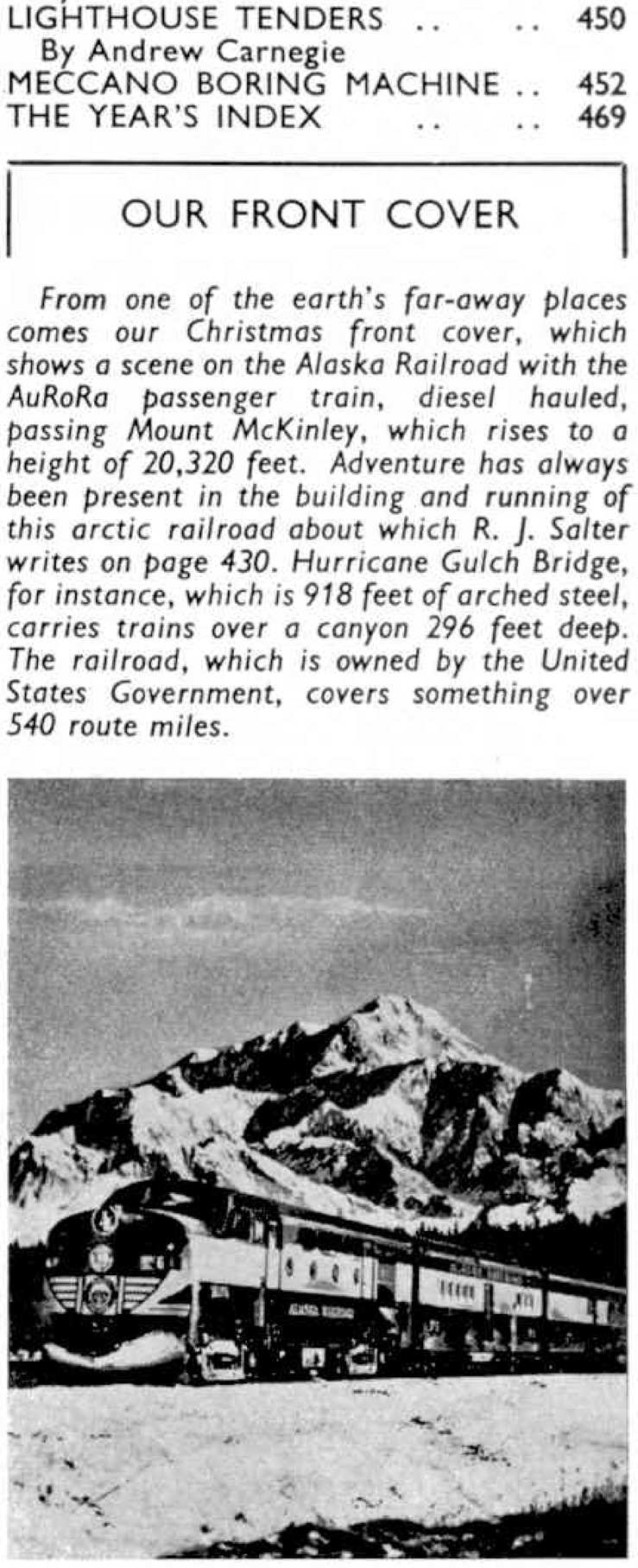
OUR FRONT COVER

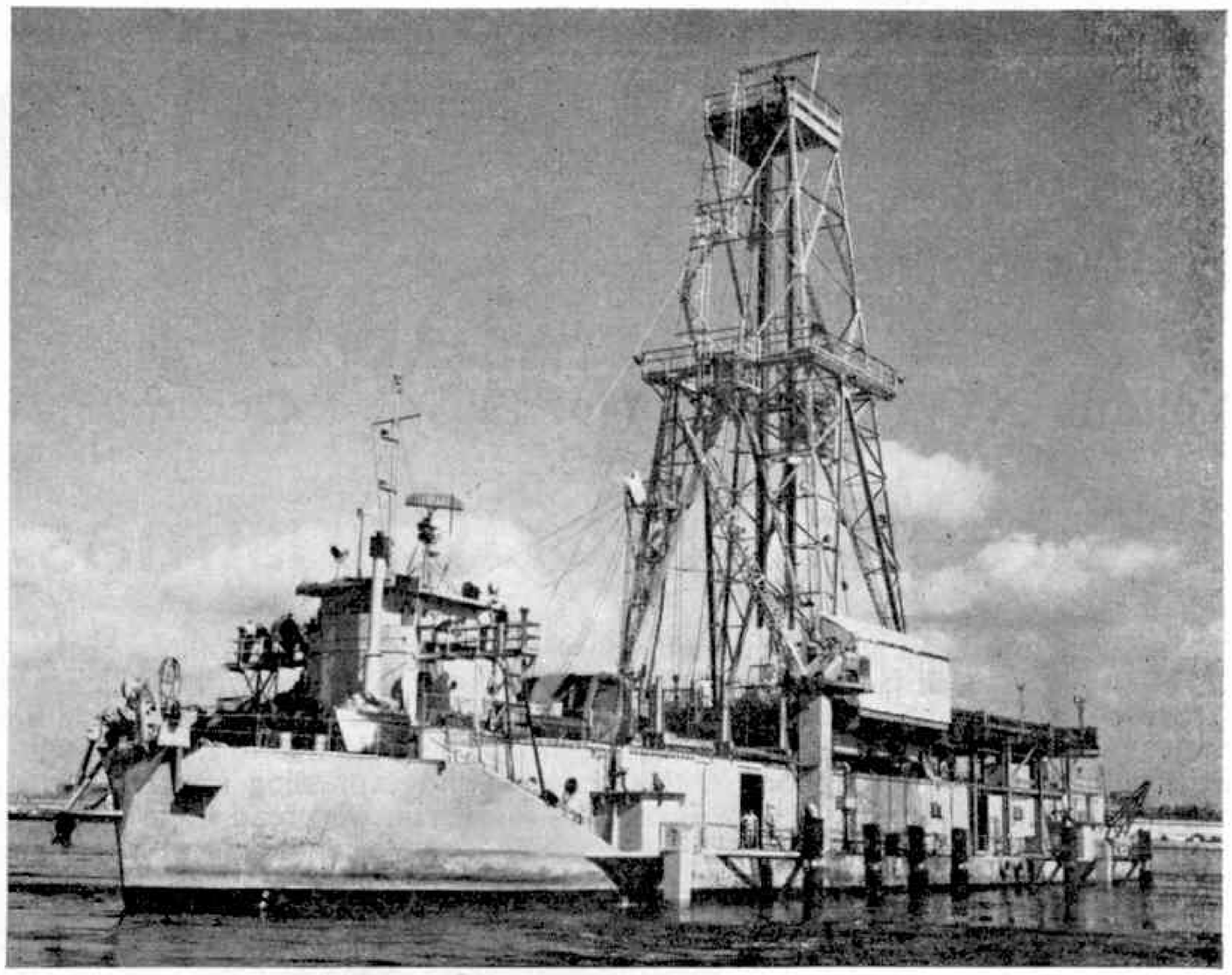
From one of the earth's far-away places comes our Christmas front cover, which shows a scene on the Alaska Railroad with the AuRoRa passenger train, diesel hauled, passing Mount McKinley, which rises to a height of 20,320 feet. Adventure has always been present in the building and running of this arctic railroad about which R. J. Salter writes on page 430. Hurricane Gulch Bridge, for instance, which is 918 feet of arched steel, carries trains over a canyon 296 feet deep. The railroad, which is owned by the United States Government, covers something over 540 route miles.



Drilling The Mohole

PENETRATING THE EARTH'S THIN CRUST

IN days gone by, men like Columbus, Captain Cook and Scott of the Antarctic, who were filled with the spirit of adventure, found a world that offered them challenges in the way of discovery. They could set out to explore and record for posterity new oceans and territories. Today, we can see all the continents marked on the map—or better still, on a globe of the earth—and I suppose there is not one small island that has been missed now that we can survey the world from aeroplanes.



Shown under way near San Diego, California is the Cuss I, the deep-sea drilling ship which took part in the Mohole project described in this article. This picture, and the illustrations at the foot of this and the opposite page, are by courtesy of the National Science Foundation, Washington.

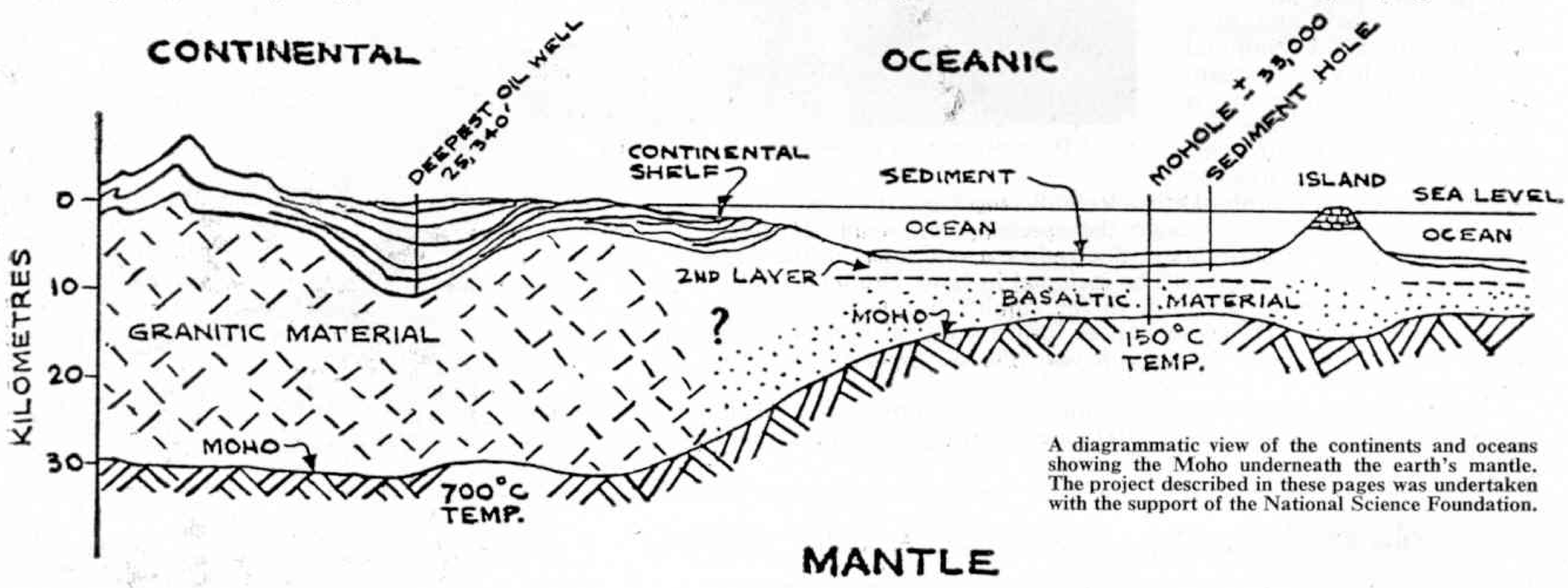
This article, which describes a fascinating experiment of modern times, has been specially written for the "Meccano Magazine" by Dr. TOM GASKELL.

One of the reasons why men are going up in rockets, and sending apparatus up to record measurements for them—is because they, too, are adventurous; they want to explore, to study the planets and the stars. But there is quite a lot of adventure still to be found on earth, as well, if you know where to look for it. Most of the discoverers of the past owed a great deal to the sea, for only by journeying across it could they reach the distant shores which beckoned to them, and today the seas which surround our globe are still the basis of new discoveries, although in a rather different way.

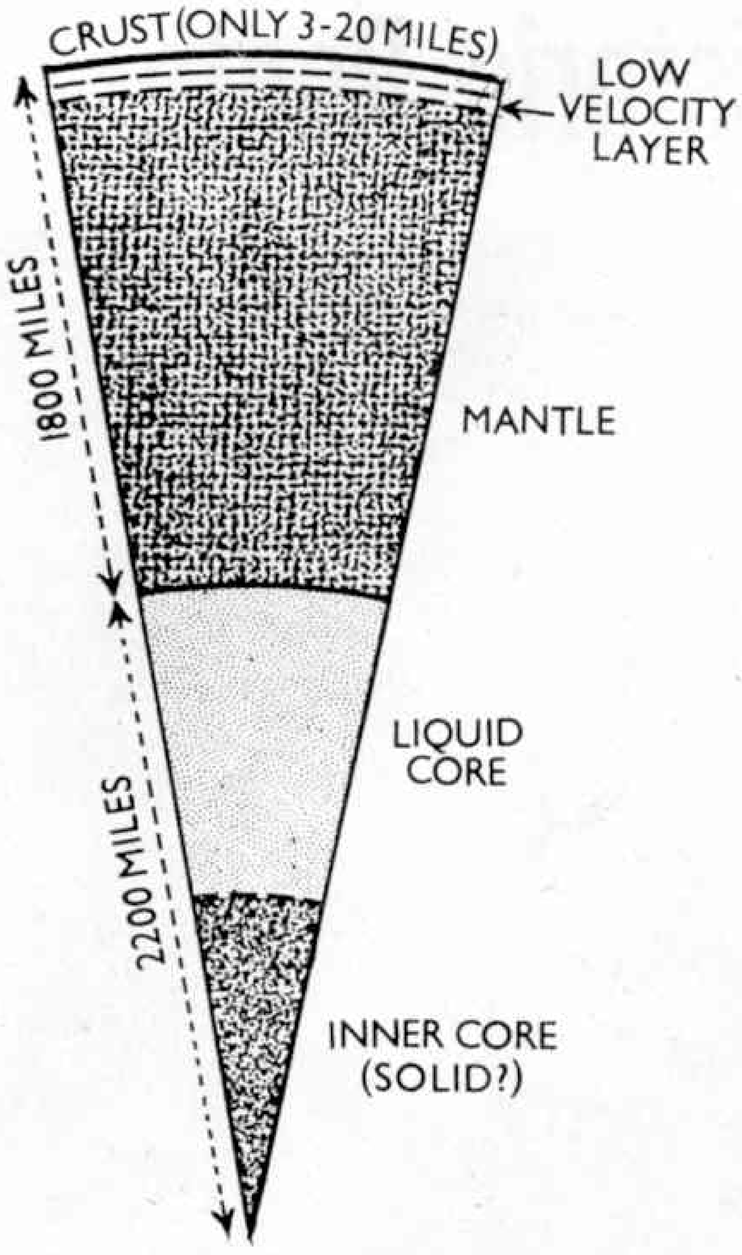
A century ago, no one knew much about the oceans. They were marked on the map and most people who bothered to think about them at all probably considered they were deep and that the bed of the ocean was flat or, possibly, that the oceans were bottomless. Now, we all know that large parts of the Pacific, Atlantic and Indian Oceans, which together cover about two-thirds of the earth's surface, are about three miles deep and we are also aware that the sea bed under these vast stretches of water is certainly not flat; it contains mountain ranges and volcanic peaks higher than those on land. The island of Hawaii, for example, is a volcano that has grown up from the sea floor to a total height of about six miles—greater than Mount Everest. Then again there are deep sea valleys such as the Marianas Trench which would easily hold the highest mountain we know on land.

The "Mantle"

All these mountains and valleys of the sea are part of the earth's crust, and the crust itself is a thin skin, varying between



A diagrammatic view of the continents and oceans showing the Moho underneath the earth's mantle. The project described in these pages was undertaken with the support of the National Science Foundation.



A segment taken through the earth showing the mantle, the liquid core and the inner core. This diagram appears by courtesy of Mr. Percy Cudlipp, Editor of the "New Scientist".

three and twenty miles in thickness, which forms the outer part of the earth. If you recall that the earth is 8,000 miles in diameter you will realise that, speaking in a comparative sense, the crust is indeed only a thin one. Made up of the kind of rocks that we see all around us, it is much thicker beneath the continents than it is under the oceans. This we know from measurements of earthquake waves. These waves travel in the different rock layers that form the earth, and by timing them as they arrive at various points on the earth's surface we are able to calculate the thickness of all the rock layers.

Beneath the crust is another layer of rock—a very thick one—stretching down half-way to the centre of the earth. This is called the "Mantle" and the point at which it joins the crust is known as the Moho (a shortened form of the name of the Yugoslavian professor, Mohorovicic, who investigated earthquake waves some time ago). The interior of the earth, between the "mantle" and the earth's actual centre is called the core and is almost certainly made up of liquid iron, with a solid inner core near the centre. Drawings on these pages show you the points mentioned in diagrammatic form.

There is not much hope that we shall ever collect a sample of the liquid core (by the way, it is not the liquid core that erupts as molten lava in volcanoes—volcanoes are caused by pockets of melted rock from somewhere near the Moho). It is within the bounds of possibility, however, that we can see what the mantle is made of. After all, men have drilled holes five miles deep on land in their search for oil, and the covering of crust above the mantle is no greater than this in the oceans.

Apart from natural curiosity to discover more about the earth, it would help our theories relating to the solar system if we could analyse the mantle to find how much of each chemical element is contained. The mantle forms about threequarters of the earth and although we think it is probably a hard, heavy kind of rock, we do not know for certain. Neither do we know how much radioactivity it contains. Any radioactive elements in the mantle will give out heat, and even in small quantities this will be important, both because there is such a large amount of mantle, and because the heat is held in by the rocks which form the earth's crust and act like a blanket.

Layer is Warming Up

There is good evidence from the earthquake wave measurements that a layer in the mantle about 100 miles down is warming up—it is marked on the sketch at the top of this page as the "Low Velocity Layer"—which means that in it the earthquake waves travel slowly, indicating that the rock at this point is nearly melting.

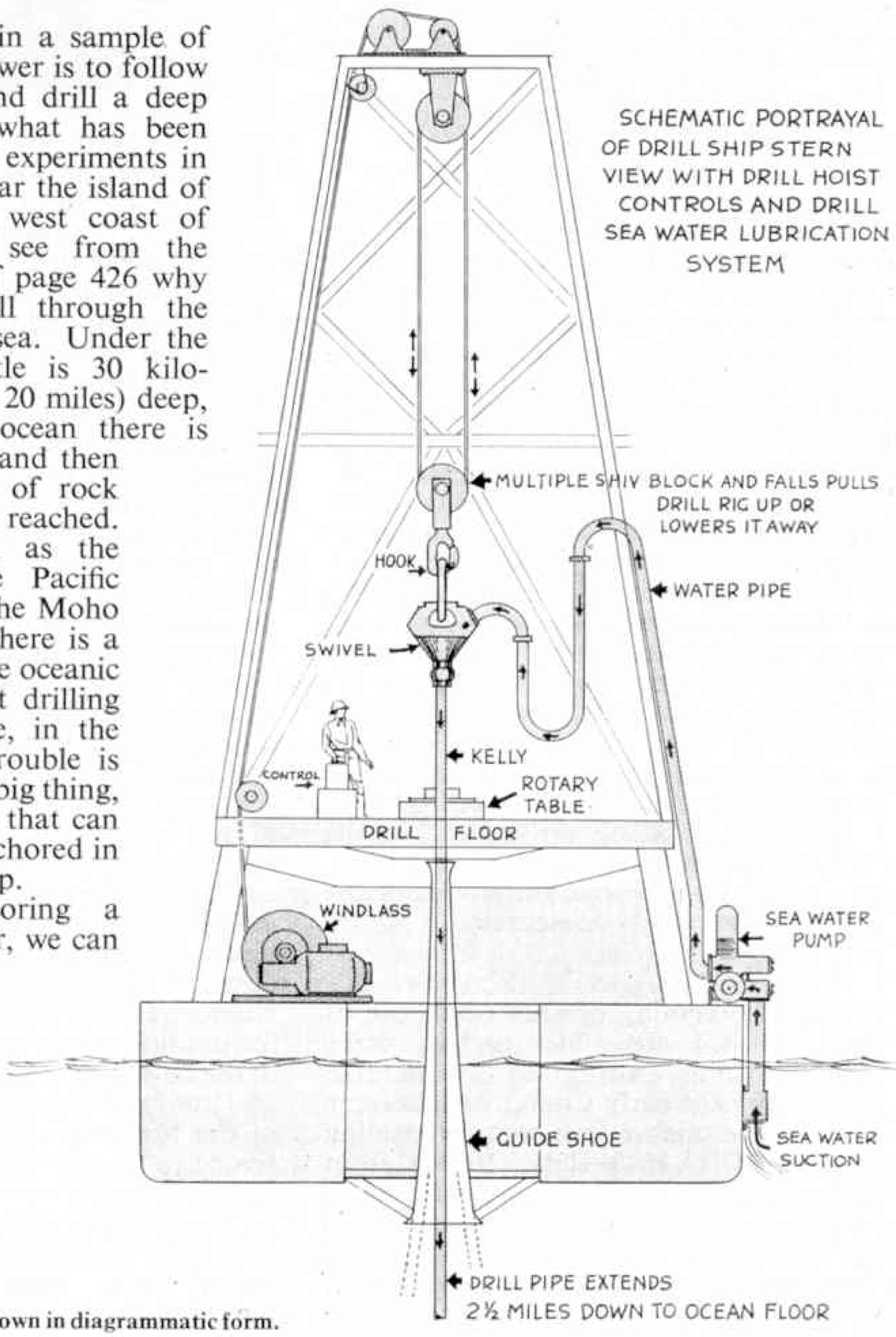
How can we obtain a sample of the mantle? The answer is to follow the oil companies and drill a deep hole. That is just what has been going on recently in experiments in the Pacific Ocean, near the island of Guadalupe, off the west coast of Mexico. You can see from the sketch at the foot of page 426 why the attempts to drill through the crust took place at sea. Under the continents the mantle is 30 kilometres (that is about 20 miles) deep, whereas under the ocean there is three miles of water and then three to four miles of rock before the Moho is reached. Under islands such as the coral atolls of the Pacific Ocean the depth to the Moho is about ten miles; there is a sort of "root" to these oceanic islands. The shortest drilling distance is, therefore, in the deep oceans. The trouble is that a drilling rig is a big thing, and the kind of ship that can carry it cannot be anchored in water three miles deep.

Instead of anchoring a drilling ship, however, we can keep it in the same place all the time, and to do this the ship used in the experiment was fitted with four giant outboard motors. By moving a control lever which is rather like the joy-stick of an aeroplane the captain of the ship can make his craft move forward, backward or sideways. So that he will know in which direction the ship is drifting, a circle of buoys is anchored all round the ship. Since they are much smaller than the ship itself they can be held in position by attaching them to weights on the bottom.

Two Ways of Knowing

The captain has two ways of knowing just how far he is from each of the buoys—he can measure the distance by radar, or an underwater echo-sounder can be used. Both methods make it possible for the ship to keep a fixed position in the deep ocean.

Now to the drilling process. Drilling a hole in the ground is rather like a carpenter drilling a hole in a piece of wood, except that everything is on a much bigger scale. The bit which cuts the rock is about eight inches across and is turned round on the end of miles of steel drill-pipe. Although the drill-pipe is tough—it is about four inches in diameter and the walls of the pipe are nearly half an inch thick—it becomes very flimsy when miles long. It is therefore (*Cont. on page 467*)


SCHEMATIC PORTRAYAL OF DRILL SHIP STERN VIEW WITH DRILL HOIST CONTROLS AND DRILL SEA WATER LUBRICATION SYSTEM
MULTIPLE SHIV BLOCK AND FALLS PULLS DRILL RIG UP OR LOWERS IT AWAY
HOOK
WATER PIPE
SWIVEL
KELLY
CONTROL
ROTARY TABLE
DRILL FLOOR
WINDLASS
SEA WATER PUMP
GUIDE SHOE
SEA WATER SUCTION
DRILL PIPE EXTENDS 2½ MILES DOWN TO OCEAN FLOOR

The stern of the drill ship shown in diagrammatic form.

Your Christmas Tree Has Historic Roots

● In homes everywhere in Britain this Christmastime trees, most of them gay with coloured lights, will have pride of place by the window—a cheery sight to all who pass by. Here is the intriguing story of the way in which this Christmas tradition began.

TODAY, no household is complete on December 25 without a Christmas Tree, especially if that home includes children. It is, indeed, the main feature of modern Yuletide celebrations and has become the token of this happy season. Yet, although the Christmas Tree as such is rooted deep in history, it is not an old tradition as English customs go, for it was not until the latter half of the nineteenth century that the tree was widely accepted here as a decoration.

By

Geraldine Mellor

Reliable historians declare that the origin of the Christmas Tree probably stems from the practice observed by the ancient Egyptians of using the palm tree to portray the year, naming its branches by the titles of the various months. The Romans, these historians further state, borrowed this usage from the Egyptians, but preferred the tip of a fir or pine tree. The conifer was lavishly adorned with toys and brightly-coloured candles in honour of Saturn, Roman god of agriculture.

Then, several centuries before the birth of Christ, when the legions of Rome were subduing all Northern Europe, the historic customs and prevailing modes of the south were introduced to these vanquished peoples of the north. The Germanic priests began to make sacrifices under the "decorated tree" near the sacred springs. There were candles, ornaments in the shape of the sun's disc, and various offerings hung upon the tree in honour of the god to whom it was consecrated.

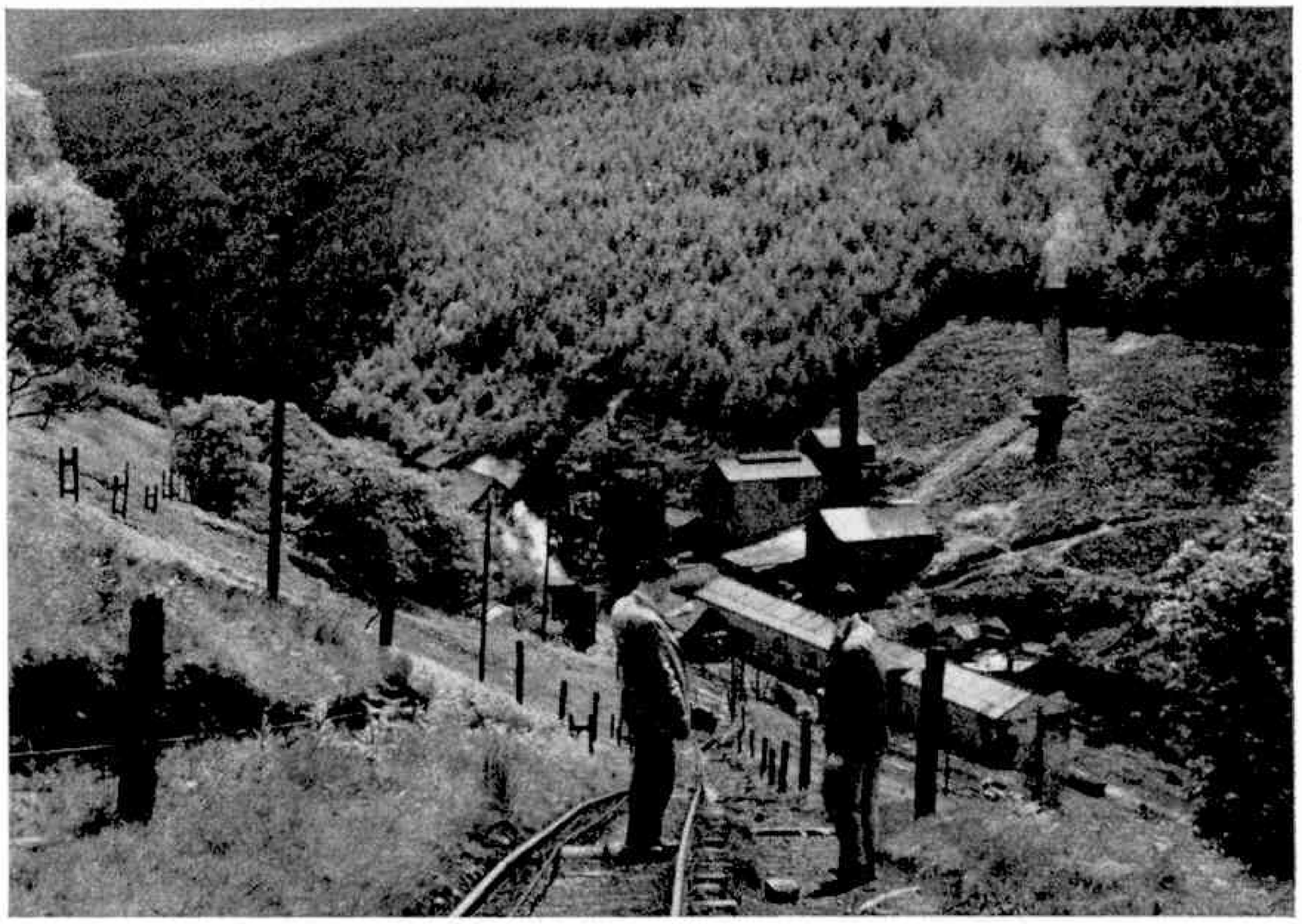
* * * *

After the coming of Our Lord, use of the decorated tree—like certain other pagan customs—was given a Christian meaning by the early Church and became a part of the celebrations commemorating the birth of the Holy Babe. In fact, from the beginning it played an important part in the German mystery plays of the Middle Ages. A favourite "mystery" was the Paradise play, symbolising the creation of Man, the fall from grace of Adam and Eve and their expulsion from Paradise. As a rule, the play finished with the comforting assurance of the coming of Jesus Christ, and with an allusion to His incarnation. Thus, this Paradise play was a much-loved spectacle for the season of Advent, with the last scene leading at once into the Christmas story.

These performances took place in a church, or on the wide square before the church. A fir tree from which many apples were suspended signified that this was the garden of Eden, and it represented both the "Tree of Life" and the "Tree of discernment of good and evil" which, as we are told in Genesis (chapter 2, verse 9), flourished in the middle of Paradise. As a rule, when the spectacle was enacted in a church, lighted candles surrounded the *Paradeisbaum* (Tree of Paradise). Inside this illuminated circle the play was presented.

Across the border, in France, the poets of the twelfth century christened it the "shining tree" owing, no doubt, to the candlelight surrounding this plant.

Following the curbing of mystery plays in sacred edifices during the fourteenth century, because of abuses, the *Paradeisbaum* was taken into every Christian home, for not only was it the one symbolic object of the pageant but, in addition, many plays had interpreted it as a token of the coming of the Messiah. Moreover, the tree continued to feature apples until the fifteenth century when a new embellishment in the form of small white wafers was added. This was to indicate that, in traditional practice, the tree on which had flourished the fruit of sin for Adam and Eve now bore



In many parts of Britain the Forestry Commission is at work making good the damage caused in war time when thousands of acres were ravaged for essential timber. Conifers, such as those seen here which will one day be giant "Christmas trees", have helped to bring about a transformation to the valleys. (Below) Forestry workers are seen filling transplanting boards with young Christmas trees.

Above: Many fine young conifer plots such as this are "thinned" and it is the thinnings that are sold as Christmas trees each year all over Britain. (Right) Christmas tree transplants are being lined out. All the photographs illustrating this article appear by courtesy of the Radio Times Hulton Picture Library.

the saving fruit of the Sacrament of Holy Communion indicated by the wafers.

Later still, small portions of pastry were substituted for the wafers, being modelled in the shape of angels, stars, bells, flowers and hearts, and invariably composed of white dough. A selection of other confections was introduced on which were stamped the images of men, roosters, birds, dogs, lions and many other animals. These delicacies had to be made of brown dough.

* * * *

The *Christbaum*, as the Germans call the Christmas Tree, did not bear lights until the mid-seventeenth century, for the festive candles usually employed in the Middle Ages were fixed on to the graduated shelves of wood known as "the Christmas pyramid". As the years rolled by, however, the tree took the place of the pyramid in its function of symbolising Jesus Christ as the Light of the World. Now the candles and shining ornaments were placed on the tree itself, instead of on the pyramid, and later stars, coloured balls of glass, oranges, sweets and other gay features were added.

The wife of the Grand Duke Charles introduced the Christmas Tree into Austria in 1816, but at that period the tree was not lighted until the morning of Christmas Day—a habit still observed in the Netherlands. About 100 years before this, Queen Charlotte, wife of King George III, had brought the first Christmas Tree to England from Germany.

Soon other Christmas Trees were brought over here and in 1832, at the beginning of King William IV's reign, the youthful Princess Victoria who was, before long, to be Queen, noted in her diary that she had seen a brilliantly ornamented Christmas Tree in Kensington Palace, London. Nine years later, when she had ascended the Throne, her husband Prince Albert obtained a handsome Christmas Tree for his children. This was planted at Windsor and at once the British public's interest was aroused.

But the real stimulus to developing the use of the Christmas Tree was imparted in 1850, on the occasion of the Great Exhibition in the Crystal Palace, London. A huge, sparkling Christmas Tree was included among the exhibits, and so many people inspected what one writer described as "this awe-inspiring sight" that, before long, everyone wanted one for themselves.

Enterprising tradesmen quickly seized the opportunity of satisfying the public's taste for this new attraction. When the exhibition closed they sold hundreds of small trees in Covent Garden Market to the many eager buyers who queued for them. By 1860, the Christmas Tree was an accepted favourite in the homes of Britain.

* * * *

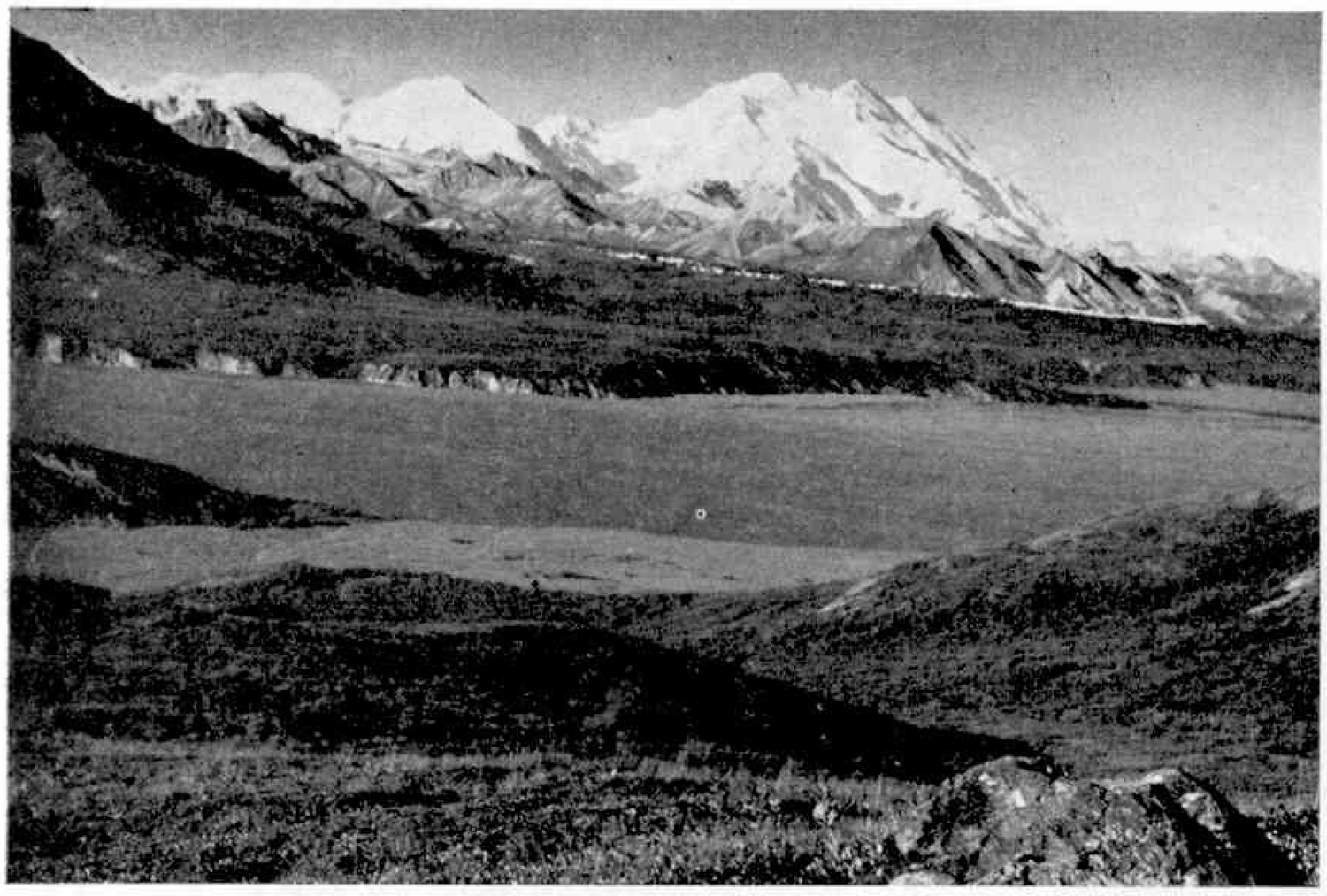
In Russia, Christmas Trees were forbidden after the revolution of 1917, but they returned—with official approval—in 1935. At that time, however, they were prohibited in Greece and Italy in order to conserve the woodlands and forests. One year prior to this, "any living plants of the various genera of pines" were prevented, by law, from coming into Great Britain because of the frequent occurrence, in overseas countries, of diseases and pests that attack conifers and elms. Consequently, all British Christmas Trees were grown at home.

Thousands upon thousands of young trees are now felled annually to cope with the huge demand for this Yuletide emblem. The main sources of supply in Great Britain include Scotland, Wales, the Forest of Dean, Devon, Suffolk, Norfolk, Surrey, Derbyshire, the Lake District, North Yorkshire and Cumberland. The Norway spruce and the Douglas fir are the conifers most favoured as Christmas Trees, since they possess the greenest and glossiest needles.

Today, these two trees are big business in Britain, for about 750,000 are required every Christmastide.

GAMAGES 1962 MODEL BOOK

Whatever your modelling hobby, miniature railways, ships, cars, aircraft or kit building, you are bound to find something of interest in the 1962 edition of Gamages Model Book. It covers miniature railway systems of various makes, including Hornby-Dublo, and in the appropriate sections other products such as Meccano, Bayko and Dinky Toys receive attention. In addition to the numerous and varied miniatures that help to fill this 128-page publication there are useful notes on prototype trains and railway equipment, aircraft, racing cars and so on. The book is really good value at 1/– from Gamages, Holborn, London E.C.1.



A JOURNEY ON THE ALASKA RAILROAD

WHAT must be one of the most wild and remote railway lines in the world penetrates deep into the heart of Alaska. Known as the Alaska Railroad it runs between the port of Seward, kept ice-free all the year round by the warm Pacific waters flowing into the Gulf of Alaska, and Fairbanks, first settled as a mining town in 1901.

It was the Klondike gold rush of 1896 that first made people interested in this part of the world. They began pushing into the interior of the Yukon and Alaska, carrying and pulling their supplies and equipment with them as best they could.

By R. J. SALTER, B.Sc.

Not until 1903, however, was a railway started out from Seward. At first its constructors found many people who believed the trappers and gold miners' stories of fantastic wealth in the interior. They were only too ready to invest money in the railway. Enthusiasm faded, and by 1907 the railway builders ran out of cash. Others took over where the first pioneers had stopped, but the length of the track measured only 70 miles before money once again ran out.

Only when the United States Government stepped in was the railway finished. In July 1923, President Harding drove in the golden spike to mark the completion of a project which had started twenty years earlier.

Men who built this railway had to be tough, for it was built without the help of modern machinery. They were immigrants to the United States from Europe—Scandinavians, Russians, Greeks and Irishmen, men who were seeking a new life in a new country. Rough log huts were built to give shelter from the cold. Between the logs moss was stuffed to keep out the draught. A roof was made from poles covered with bark or grass and then given a final cover of several feet of earth. Flour sacks were used where glass should have been in the windows and oil lamps provided the meagre illumination.

After a hard day's work the railroad builders slept in bunks. Built at each end of the room, in tiers, they looked like pigeon holes or the post office boxes inside large central post offices. Each space was four feet square and eight feet deep. Built, once again, of poles there would often be four tiers of bunks at each end of the hut with six bunks in each row.

Travelling along the railway today it is difficult to realise the privations of the builders. But while it may be warm inside the heated trains, many precautions have to be taken to keep the track safe. In the tunnels where water drips from the roof men have to be ready to break away huge, frozen icicles hanging down from the roof just before the train is due to pass through. Some tunnels have large doors, and a steam plant just outside the tunnel portal has to be kept working all the winter to keep the inside of the tunnel above freezing point.

Where the line passes through the mountains, the depth of the snow often reaches 15 feet. To keep the line clear rotary snowploughs, pushed by two locomotives, are kept shuttling up and down the line. Snow slides, with rocks and trees buried in the snow, used to be cleared by gangs of up to 100 men using explosives. Today, the biggest bulldozers made are used to force a way through the blockage.

Another hazard to the trains is caused by herds of moose. These wild animals, weighing as much as half a ton each, get on to the snow-cleared railway tracks and race along just ahead of the train. It is believed they refuse to get off the tracks to safety in the snow on either side of the line because they think the train is a wolf. Moose know their only chance to outrun a wolf is on snow-cleared ground, and so many are killed each year by locomotives which cannot stop in time.

To try to cut down the deathroll, which has reached 175 in one winter, escape paths have been bulldozed through the high snow banks and metal plates fitted on to the bridge decks so that they do not fall through.

These cold winter conditions have their effect, too, on the men who run the railway, and on the locomotives themselves. When the temperature drops past 41 below zero, railway regulations say the load to be pulled can only be about half of what could be hauled at more normal temperatures.

Dinky Toys News—

(*Continued from page 448*)

George R. South of Toronto, Canada; Anthony J. Kett of Chorleywood, Herts.; Michael L. Rogers of Leyton, London; Billy Duke of Grantham; Brian Campbell of Blairgowrie, Perthshire; Robert James Moody of Swaythling, Southampton.

I feel I should point out the more pronounced mistakes which occurred in a lot of entries. I was quite surprised, for instance, at the number of competitors who did not state the catalogue number of the models. As this was a condition of entry in the competition, they could not hope to succeed. A large number of competitors also mistook the Singer Gazelle, which was No. 4 in our photograph, for a Sunbeam Rapier, or the Dodge Royal Sedan, which was No. 3, for a Plymouth Plaza. Another quite common mistake was the spelling of Volkswagen with an "o" or an "a" instead of an "e" and the spelling of Lago with an "r" after the "a", perhaps the more musically inclined of you having confused it with the masterpiece by Handel!

Most competitors were successful in recognising the Talbot-Lago, but quite a number made a mistake with the Nash Rambler, listing it as a Chevrolet El Camino Pick-Up Truck. Incidentally, since that portion of the Nash Rambler shown was exactly the same as the Fire Chief's Car No. 257 I accepted either as a correct designation. In general the standard of entries was very high and I do congratulate you all on your enthusiasm.

Co-Co Triumphs In Four-Day Test

51 WAGONS HAULED 100 ACTUAL MILES— NON-STOP

The impressive indicator board in Meccano Limited's London Showrooms, which marked the progress of the Co–Co's run. The Co–Co itself with a part of its enormous load is passing the indicator board.

MANY records of performance and durability must have been established by products of Meccano Limited over the years, but none can have been more impressive than that recently

By The Editor

achieved by a Hornby-Dublo Two-Rail Co–Co Diesel Electric Locomotive in Meccano's attractive and roomy London Showrooms which front on to Berkeley Square.

A special test run to last four days was arranged, and I may tell you that quite a number of people had their fingers crossed about this because the trial through which the Co–Co Diesel was to be put was indeed an extremely exacting one. Its task was to haul 50 wagons (actually, 51 were put on for good weight!) a distance of 100 actual miles. It was not planned that this should be done non-stop, but in point of fact that was achieved, to the delight of those responsible for arranging this fascinating demonstration.

For those who are interested in statistics, the Co–Co Diesel Electric Locomotive, weighing only 1 lb. 6 ounces, actually hauled a train which was over 17 feet in length. Starting to move at 9.30 a.m. on Sunday, October 1, it covered the distance of 100 statute miles at an average scale speed of more than 82 miles an hour by 8.30 a.m. on Thursday, October 5.

The Locomotive hauled its train load around a 52 ft. track which equalled three-quarters of a statute mile in scale. To complete the run of 100 actual miles it was necessary to make 10,133 circuits of the track, and it was felt when the demonstration was first arranged that it might be necessary to stop the locomotive once in every 24 hours for the purpose of re-oiling the armature bearings. However, as the run progressed it was obvious that this procedure was not necessary. Indeed, when the locomotive was subsequently examined for wear on the brushes and commutator it was found to be capable of running well in excess of the task set for it.

During the four days of high-speed running the tiny armature of the locomotive completed more than 78,000,000 revolutions. The motor was of the Ring Field type which has brought so much delight to many thousands of Hornby-Dublo enthusiasts since being fitted into this and other Two-Rail and Three-Rail models.

From the picture you can see how the demonstration run was recorded on a large display board. The left hand dial on the centre control panel showed the statute miles covered, while the right hand dial gave the speed which the train was travelling in scale miles per hour. Underneath the left hand panel a further indicator showed the scale miles covered and across the top of the board, graduated in five-mile units, was a scale running from 0–100 showing in graphic form the train's situation at any one moment during its adventurous journey. On the left side panel of the indicator unit was stated the weight of the locomotive; the weight of the train; the distance to be covered; the average scale speed anticipated and the length of the track. The panel on the right recorded the length of the train; the number of track laps required to complete the journey; the number of armature revolutions during the trip; the number of wagons and the approximate time required to complete the run.

Members of the public were allowed to see this trial journey and they crowded into the Showroom to admire the stamina of this fine locomotive. Not many of them spotted that one extra wagon had been added to the total to make very sure that the Hornby-Dublo Electric Locomotive fulfilled its required task.

Test Spins In The Latest Jaguars

Latest from the Jaguar stable the Mark X Jaguar which our contributor drove around the Goodwood circuit on the test run.

A DAZZLING array of British cars, this country's answer to fiercer competition from the Continent, stole the limelight at Earls Court this year. The centre of attraction was the magnificent Mark X Jaguar, and on Sunday, October 22—on the occasion of the 14th Motor Show Test Day at the Goodwood circuit—I was privileged to drive this very fine motor-car, as well as its stablemate, the E Type.

As on previous occasions British manufacturers sent their latest models to Goodwood for inspection and test by overseas journalists and members of Britain's Guild of Motoring Writers. It was, as usual, a highly successful day and scores of journalists were able to drive the cars of their choice, ranging from the Rolls Royce Silver Cloud and the Bentley S.2 saloon to the potent Mini-Coopers, for three laps of the 2.4 mile Sussex circuit. The fact that the chicane was removed for Test Day is no reflection on the driving ability of the average journalist!

Having completed three laps in one of the E Types—the open version—I would quite willingly have called it a day and not bothered about anything else, for this is a fabulous motor-car. Tremendously powerful, yet steady as a rock and with the road-holding properties of a leech, it is to my mind without equal in any price range. On Lavant Straight 100 m.p.h. came up on the clock with ridiculous ease—followed by a touch on the powerful disc brakes for tricky Woodcote Corner and an exhilarating upward surge through the gears as we accelerated past the pits—over 80 on the clock—and lined up for Madgwick Corner.

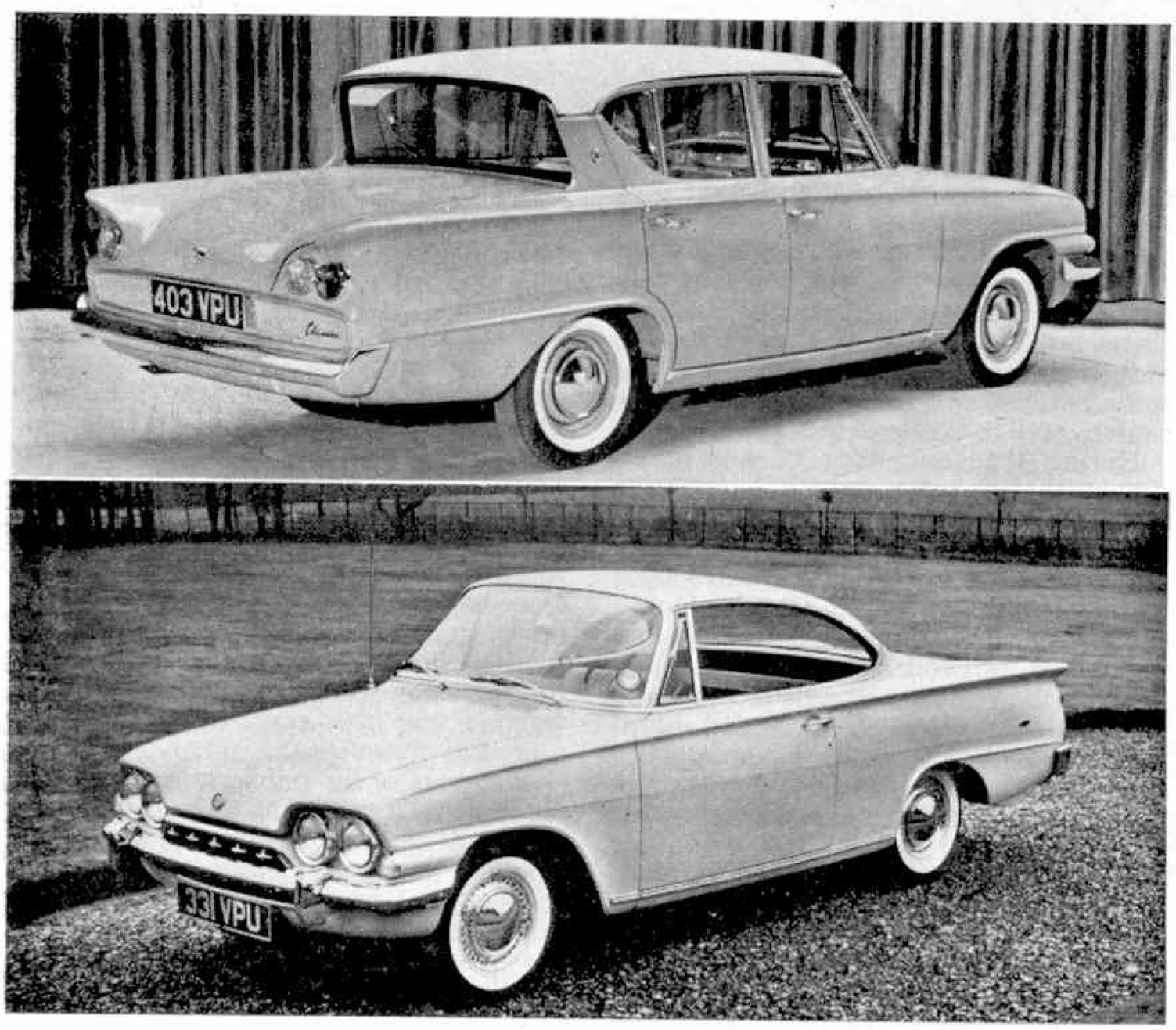
The three laps with the E Type were over all too soon but I was to find that the Mark X gave an equally exhilarating ride. In fact, after a brief acquaintance with it, there are many journalists who say that this large, yet elegant, saloon handles as well as the E Type. It has that feeling of tautness usually found in thoroughbreds of the racing circuits and I was most impressed by the way in which the Mark X could be hurtled through Goodwood's numerous curves and swerves.

PETER LEWIS

writes about events in the motoring world

With independent suspension front and rear the Mark X corners as if on rails, and on the straight, with 90 m.p.h. readily to hand for the asking, it is remarkably smooth and quiet. This is no sedate family saloon, but a car with a safe maximum of 120 m.p.h. that can be driven hard and fast, making full use of gross brake horse power in the region of 265 b.h.p. from the renowned XK six-cylinder twin overhead camshaft 3.8 litre engine.

Having sampled three Jaguars in one day—for I drove the 3.8 litre saloon as well—everything else should have been tame by comparison. But this was not so. This country is turning out some fine cars and I enjoyed to the full the amazing performance of the diminutive Austin–Cooper, the powerful response and improved handling of the Austin–Healey 3000 Mark II, the excellent handling characteristics of the new Sunbeam Harrington Le Mans, and—last, but not least—the whisper of the V8 engine of the S Bentley at 90 m.p.h. on Lavant Straight and the uncanny automatic gear change of this £6,000 car. In three laps neither I



Careful heed has been paid to aerodynamic principles in the Consul Classic 315 (top, left). Below: The Consul Capri, shapely two-door derivative of the Consul Classic, will carry two people in extreme comfort in large, deeply-cushioned bucket seats.

Racing Personalities

STIRLING MOSS

An informal picture of Stirling Moss, whom the Guild of Motoring Writers have elected "Driver of the Year".

ON December 19, at the annual dinner of the Guild of Motoring Writers, at the Royal Automobile Club in London, 32-year-old Stirling Crauford Moss will be awarded the Guild's "Driver of the Year Trophy." Why Moss and not the American driver, Phil Hill, who has won the World Championship this year? The answer is found in the citation for the award which reads: "To be awarded annually to the driver of any nationality who, in any make of car and in any motoring event (or events) shows such skill, courage, initiative or endurance—or a combination of any of these qualities—as to single him out, in the opinion of the Guild, as the Driver of the Year."

In spite of Hill's highly creditable performances, Moss has stood out head and shoulders above every other driver this year. Always at his best when fighting against heavy odds—and who can deny the overwhelming strength of Ferrari in 1961—Moss has given two superb performances. At Monaco, in the first race counting towards the 1961 World Championship, he drove one of the finest races of his career, pitting his skill and Rob Walker's 1960-type Lotus against the 1961 V.6 Ferraris. He held at bay a powerful, triple Ferrari challenge as no other driver could have done. Moss won by 3·6 seconds from Ginther's Ferrari and shared fastest lap with Ginther in 1 minute 36·3 seconds.

Those of us who saw Moss at Aintree in the British Grand Prix saw him at the very top of his form, snapping at the heels of the Von Trips' Ferrari for lap after lap in atrocious weather, and keeping up with a faster car by sheer driving ability until forced to retire with a broken brake pipe. But it was at the Nurburgring—that gruelling, dangerous circuit—where Moss proved, yet again, that his superior skill on a demanding circuit such as the "Ring" was more than a match for drivers with the greater power and performance of the 1961 Ferraris at their disposal. He was master of the "Ring" that day, holding at bay the Ferraris of Von Trips and Phil Hill and doing so in Rob Walker's Lotus, a car with an outdated and underpowered engine that was giving some 30 brake horse power to the Italian cars. Moss won by 21·4 seconds from Von Trips, and it was clear then that no other driver contesting the 1961 championship was in the same class as Moss.

nor my three passengers were aware of the automatic transmission, and I certainly could not say when or how often the S Bentley changed gear.

BORG-WARNER TRANSMISSION

One of the most significant events of recent months has been the introduction by Borg-Warner of fully automatic fluid transmission for medium size cars. This form of transmission has been available for larger cars since 1956, but the weight of the unit and its bulky housing has prevented its adaptation for smaller cars. With the new Type 35, Borg-Warner have found the answer for the smaller car. Extensive use has been made of high-grade, die-cast alloys, thus eliminating the weight penalty, while compact construction and clever design have kept the dimensions of the casing containing the automatic transmission to the absolute minimum.

The Type 35 is available—at a cost of £99 including purchase tax—for such cars as the Austin A60, the Wolseley 16/60, the M.G. Magnette, the Riley 4/72 and the Morris Oxford Series VI, and consists of two main components. First there is a hydraulic torque converter coupling (available in various diameters to match the torque characteristics of different engines) which replaces the conventional flywheel and clutch and provides a fluid connection between the engine and the gearbox. Moreover, it multiplies at an infinitely variable rate between 2:1 and 1:1 the stepped ratios of the gearbox.

Secondly, there is a hydraulically-operated gearbox incorporating a planetary gear set providing three forward ratios—2·39:1, 1·45:1, and 1:1, as well as reverse ratio of 2·09:1. These various mechanical ratios are obtained by the engagement of hydraulically-operated multi-disc clutches and brake bands. The hydraulic torque converter coupling and the automatic gearbox share a common fluid supply.

As with previous Borg-Warner systems, control of a car with the B.W. Model 35 automatic transmission is through the accelerator and foot brake. With the selector in "drive", which is used for all normal motoring, the transmission starts in first gear and automatically changes to second and third gears depending on road speed and accelerator position. Changes from third to second and from second to first occur automatically as the speed of the vehicle decreases.

THE RACING CAR SHOW

For the third year in succession, the International Racing Car Show will take place at the Royal Horticultural Halls, Westminster from December 30 until January 6. There will be 73 stands for exhibitors, and the organisers—the British Racing and Sports Car Club—expect an even bigger attendance than last year when 64,000 people (*Cont. on page 465*)

This picture shows last year's racing car show at the Royal Horticultural Halls, Westminster. The picture appears by courtesy of the British Racing and Sports Car Club.

CHRISTMAS WEATHER LORE

● *Are You Dreaming Of A White Christmas? The Odds Against A Substantial Snowfall On December 25th Are Very Considerable, Says The Writer Of This Article.*

WILL Christmas 1961 be a white one, with plenty of snow covering the landscape and ample opportunities for tobogganing and snowballing? That's the kind of weather we have come to associate with Yuletide. Snow scenes dominate our Christmas cards, Santa Claus arrives by sleigh, and we sing carols about the snow being "deep and crisp and even."

It is a pity to explode the idea that this kind of weather should accompany our celebrations, and that it is usual at this season. But meteorological records cannot lie, and in point of fact the chances of a substantial snowfall occurring widely in

By

ARTHUR TURNER

Britain on Christmas Day are much more remote than most people realise. The odds against it are in the region of 15 to one.

Since 1840, appreciable snowfalls have occurred on only twelve Christmas Days. Taking Christmas Eve and Christmas Day together, only one year in six has provided us with a white Christmas.

Some Blame Dickens

The association of snow and ice with Christmas in stories, pictures and poems, it seems, is one of those things for which very little evidence exists, at least so far as Britain is concerned. Diarists as well as meteorologists add to the collection of data which shows that the white Yuletide is mythical.

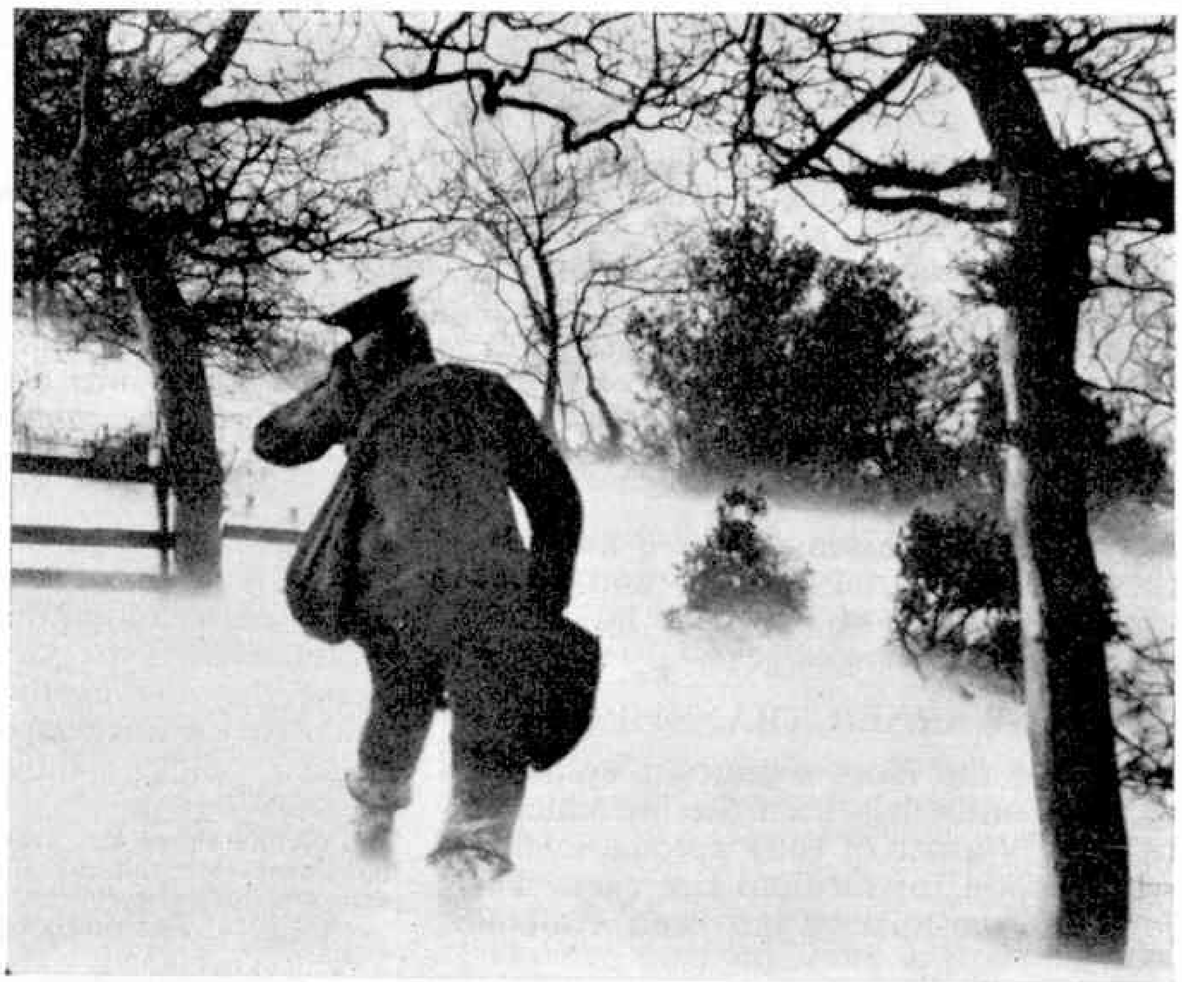
Some experts blame Charles Dickens for the belief that it isn't really a satisfactory Christmas unless there is plenty of snow around. In all his novels, he pictured this season of the year as snowy and cold. It is thought he did so because there happened to be a series of very severe Yuletides during his early life. Six such Christmases are recorded between 1812 and 1832.

Weather students say that not only are Christmases less likely to be accompanied by snow than we usually imagine, but that frosty Christmases are becoming rarer, too. We have had some astonishingly warm ones during the last 40 years or so.

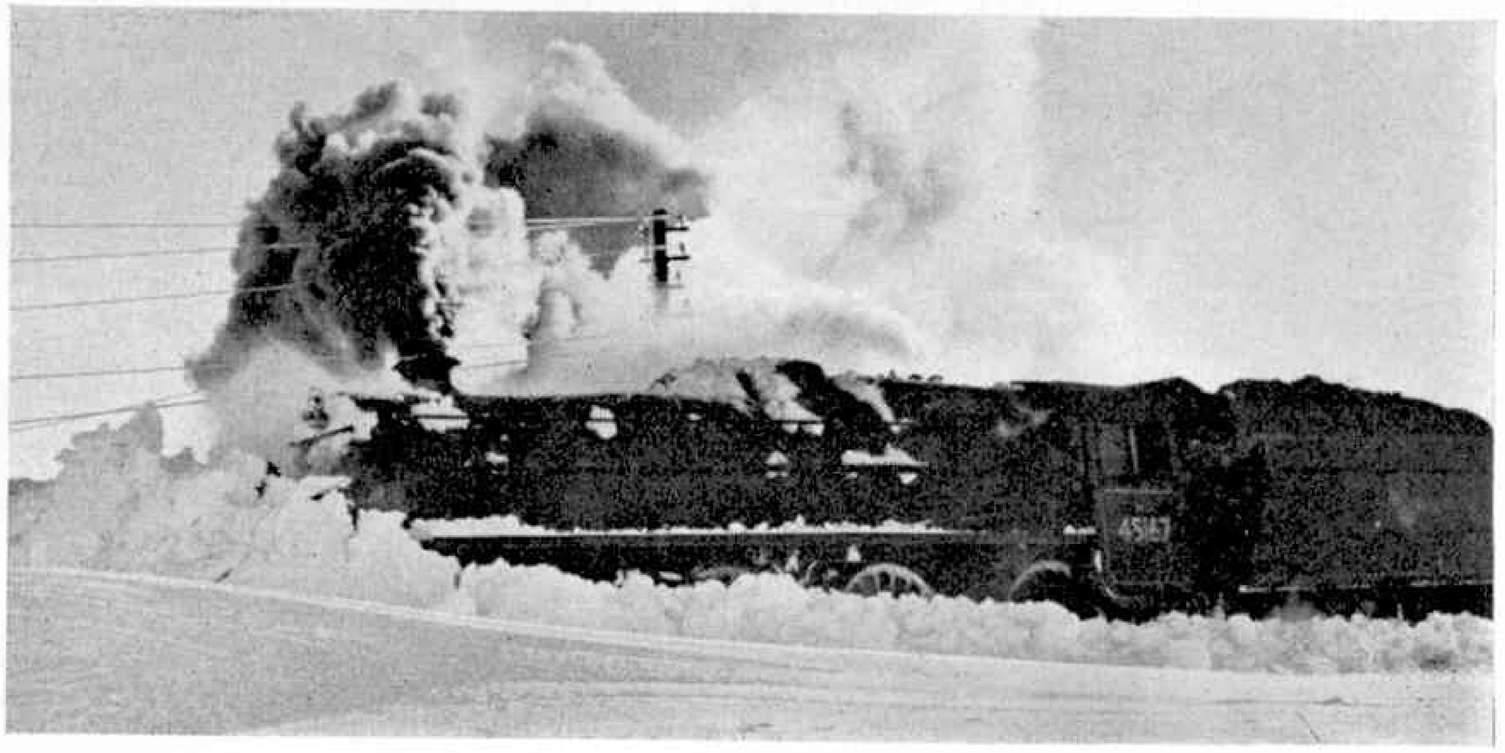
In 1920 the thermometer rose to more than 50 degrees on Christmas Day, and if we go back another seven years we come to one of the most remarkable Christmases in living memory. Christmas Day, 1913 was so warm that roses bloomed everywhere, apple trees were covered with blossom, raspberries ripened, and in Southern England violets and primroses were gathered. Marguerites and geraniums were in full bloom in Somerset, and barley was in full ear at Gravesend. Sixty varieties of flowers were noted as being out in Ryde, Isle of Wight.

At the other end of the scale there was the blizzard of Christmas Day, 1927, a freak of the weather which was all the more uncomfortable by reason of its rarity on December 25. Guests found themselves unable to get home from parties, and transport was in chaos for days. Although people had stocked up food for their celebrations, supplies ran short before things could be got moving again.

To find an example of a Yuletide with even more snow it is necessary to go back



A postman trudges through a blizzard to deliver Christmas letters and cards. Such weather makes the work of the Post Office exceptionally difficult at this season, but the slogan is, "The mail must get through."



A steam locomotive fitted with a snowplough clears the track in Christmassy conditions near Newmachar, Scotland.

There are plenty of jobs for A.A. Road Scouts when snow and ice make the roads treacherous, and these men help to keep Christmas transport moving safely.

Snow scenes look attractive enough on Christmas cards, but when they interfere with rail traffic they are unwelcome. Pictured here is a snowbound diesel train near Newmachar.

to 1831, when the flakes began to fall just before Christmas Day and continued to do so for a week. Those were stage-coaching days, and the blizzard caused horse-drawn vehicles all over the country to be abandoned in snowdrifts, the passengers seeking shelter wherever warmth was to be found.

The Brighton–London mail coach on Christmas Day had to be left eight miles from its starting point while the guard set out on foot to bring assistance. When he returned, coach and horses had become so deeply buried that they could not be found for a considerable time, and it was impossible to extricate them. Similar reports came from mailcoach drivers in many other parts of the country.

A nineteenth-century instance of the contrary kind of Christmas occurred in 1852, when the midday temperature reached 56 degrees, making Christmas Day almost like a day in June. Although such a temperature has never been recorded since then at Yuletide, there have been many mild, dry, "green" Christmases in the last 100 years.

The one thing about which we can be certain, in fact, is that there is no certainty about the weather we shall have on Christmas Day! It may even bring floods —as it did in 1837. It began to rain nearly a week before Christmas Day and continued to do so until Christmas Eve. By that time the streets of many towns were inundated. Rivers and drains overflowed, roads became impassable, and water swept through houses.

Flooded Streets

In Leeds, some streets were flooded to a depth of more than four feet, and much damage was done in other cities and towns. Although Christmas that year was such an unpleasant affair, it is recorded that some householders benefited when flood water washed barrels of beer from an inn, and brought free ale to their doorsteps in time for the celebrations.

The possibility of a recurrence of such a wet Yuletide still exists, of course, but we are hardly likely to experience this year a repetition of the Arctic Christmases of earlier centuries.

In the sixteenth and seventeenth centuries some exceptionally severe weather marked Christmas. Londoners had a really jolly time in 1683, when the Thames froze from bank to bank and the ice was so thick that it was able to support shopping and entertainment booths. Royalty were among those who enjoyed themselves on the ice. The London Bridge of that period had narrow arches which held back floodwater, thus forming an upstream lake that froze easily. Even coaches were able to use the ice-covered Thames as a thoroughfare, and one enterprising businessman set up a printing press there, where broadsheets, with verses appropriate to the occasion, were printed and sold to the merrymakers.

Other Frost Fairs

There have been other big frost fairs on the Thames, the last being in 1814. Of one such event in the sixteenth century it was written that there were more people on the river on Christmas Eve than in the city streets.

The coldest Christmas during the nineteenth century is said to have been that of 1860. On Christmas Day the thermometer in Hyde Park, London, showed 17 degrees of frost, but in some parts of the country the temperature fell much lower at night. A Nottinghamshire meteorologist recorded more than 45 degrees of ground frost.

One kind of weather we do *not* relish at Yuletide is fog. It does not often occur on Christmas Day, to play havoc with transport, but such a visitation paralysed much of England in 1904. We had a foggy Christmas Day in 1937, too, when in some localities visibility was reduced almost to nil. But the pea-souper cleared more rapidly than did the fog of 1904.

No True Comparison

In comparing present-day Christmas weather with that of the past, some points which are often overlooked should really be kept well in mind. Although there has certainly been a change in the general weather cycle in the last two or three centuries, and conditions seem to have become increasingly warmer, the tendency to exaggerate them must be guarded against.

We remember our white Christmases more easily than other kind, and are therefore apt to assume that they occurred more frequently than they actually did. It is even more important to recognise that it is almost impossible to make a true comparison between Christmas today and the Christmases of the past, since the calendar was altered in 1752. In that year, eleven days were deleted. This means that the day we now call December 25 fell on January 5, and the chances of snow, or icy weather, are greater on the later date.

The calendar alteration gave us, on the average, better Christmas weather. The revision was beneficial for that reason alone, since there is a growing belief today that although a white Christmas looks attractive on Christmas cards, it is less so in actuality.

The Caribou Puts On Winter Shoes

THE sturdy Caribou twin-engined transport built by de Havilland Canada was designed as a go-anywhere aeroplane, able to carry the same load as a Dakota into and out of airfields that would be far too small for a "Dak". It does its job so well that the U.S. Army has chosen it as a standard combat area transport.

AIR NEWS

By

John W. R. Taylor

In this role, it is much more likely to have to land on small, rough fields or roads than on a nice hard runway. Nor would it be much use if it could not land and take off when the surface was muddy or covered with snow. For that reason, de Havilland have now produced for it a set of winter boots in the form of a combined wheel-ski undercarriage, as shown in the illustration at the foot of this page.

The skis are made of aluminium alloy, coated with plastic to make them run more easily over the snow. Those on the main wheels are 13 ft. 8 in. long and are so designed that the pilot can raise them seven inches relative to the wheels when he is able to make a normal landing on a hard surface. The nose-wheel ski is 9 ft. 9¼ in. long, and is fixed. Of particular interest is the fact that the skis can be installed or removed with the aircraft standing on its wheels, without any need for jacks or special equipment.

When the photograph was taken, the Caribou was on its way to try out the skis on the snows of Greenland—the traditional haunt of Father Christmas. Perhaps de Havilland will try to persuade the old gentleman that a Caribou is better than its relations, the reindeer, for hauling heavy loads of toys in cold weather!

"WISE WITHOUT EYES"

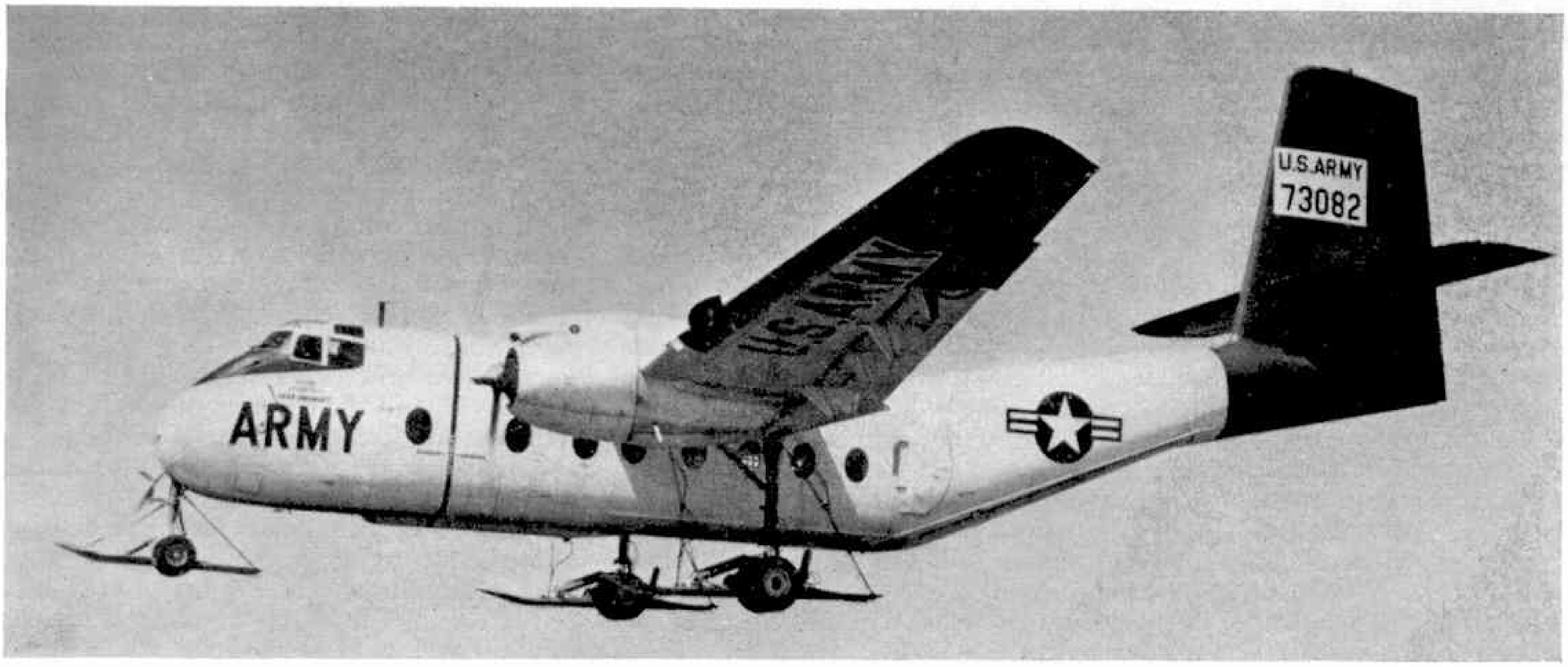
The motto of No. 37 Squadron of the Royal Air Force is "Wise Without Eyes"—a reminder of the time when its main job was night bombing. Today, the eyes of its airmen, and the radar eyes of its four-engined Shackleton over-water patrol bombers, are of the greatest importance, because its duties include search and rescue missions from the R.A.F. Station of Khormaksar, Aden.

Looking for a needle in a haystack would seem simple to the aircrew of No. 37, who might be called on to search for a ship in distress, or a missing aircraft, anywhere in a vast area stretching from Libya in the west to Karachi in the east, and from Kuwait in the north to Kenya in the south. In this area are the Red Sea, the Gulf of Aden, the Persian Gulf, the Arabian Sea, the Indian Ocean, the vast deserts of the Arabian Peninsula and the jungles of East Africa.

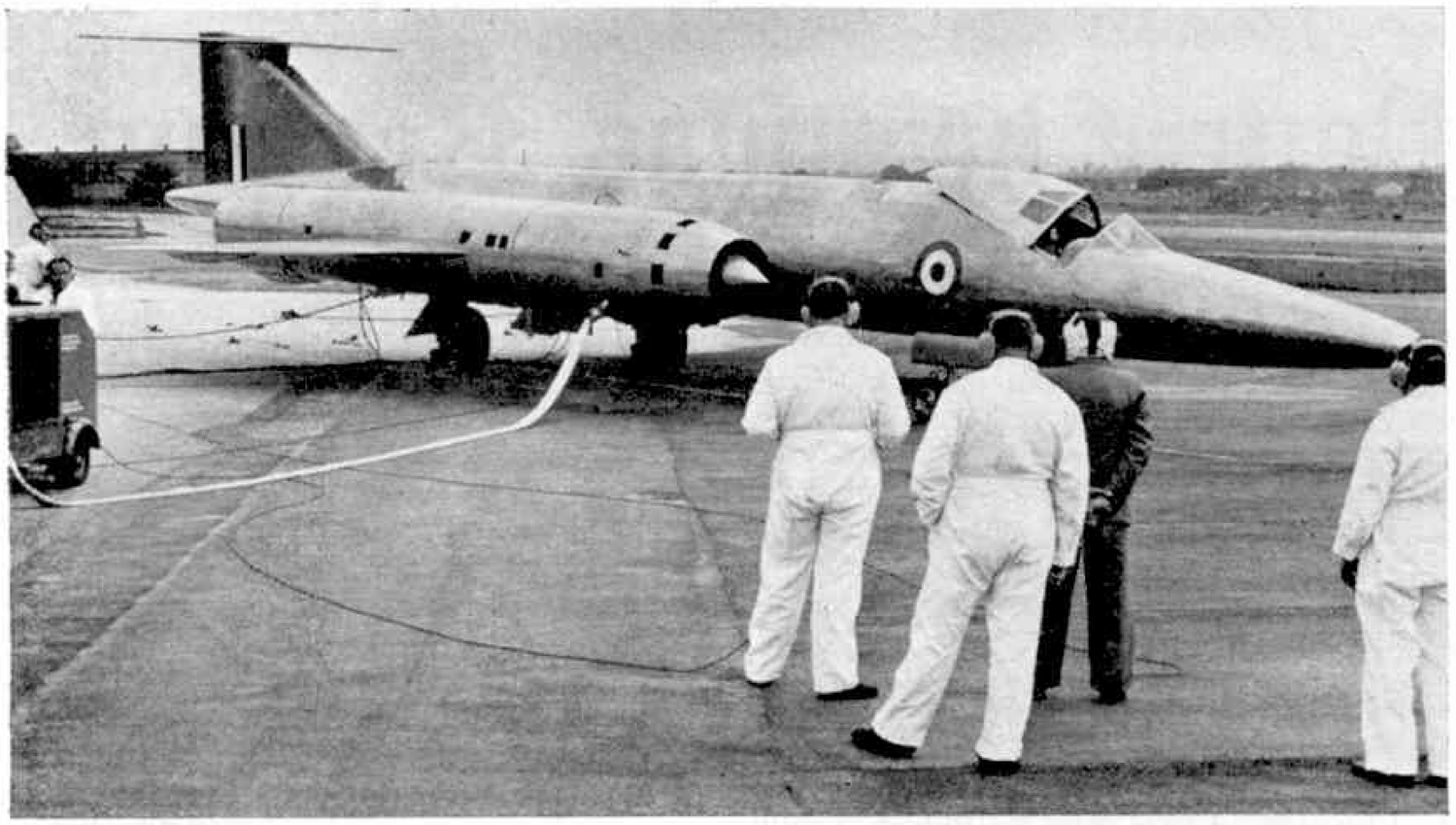
No. 37 hit the headlines this year when one of its Shackletons made a dramatic dash to drop survival equipment and guide rescue ships to the liner *Dara*, which caught fire and sank with heavy loss of life in the Persian Gulf. More often its work involves long, arduous flights of up to fifteen hours, covering distances of as much as 2,500 miles.

Sea searches are normally carried out at a height of 500 feet. In the Middle East this is too low for comfort, and the interior of the aircraft becomes extremely hot. This, coupled with long hours of searching

A heli-tack crewman equipped with specially designed suit and fire tools ready to take off to fight a blaze. He will jump from a helicopter hovering about 10 feet above ground.



A Caribou aircraft with wheel-ski undercarriage.



Ground testing the Bristol 188's de Havilland Gyron Junior engines, at Filton.

Wing-Commander Wallis flying the Beagle-Wallis WA.116.

hundreds of square miles of featureless ocean—or desert as the case may be—has an almost hypnotic effect on the aircrews. In fact, if the look-outs were not rested and replaced regularly they would get like the wartime Coastal Command flying-boat pilot who thought he saw a motor-cyclist riding across the waves 500 miles off the Cornish Coast.

JUMPING TO IT

The top picture on the previous page shows what the well-dressed American forest firefighter is now wearing. Known as a "heli-tack" man (short for helicopter-attack), his job is to jump from a helicopter hovering about ten feet above ground to attack small fires with shovels, axes and brush hooks. The baseball mask and "bone-dome" helmet protect him from hard landings in rough country.

The heli-tack crews had a chance to prove their worth when storms struck the Angeles National Forest, California, causing up to 50 lightning-sparked fires an hour. In areas where trucks carrying ground firefighters could not break through, they leaped into action with hand equipment and chain saws ferried in by the helicopters, cutting down standing dead trees that had been scorched by lightning, and dealing with small outbreaks.

At the same time, other aircraft smothered bigger fires with chemicals in order to put them out, while spotter planes circle continuously to detect new outbreaks. The whole operation, directed by radio, saved hundreds of thousands of dollars' worth of timber, and probably homes and human lives as well.

ONE-MAN AUTOGYRO

When I was a boy in my home-town of Ely, in the Fen country, I often saw strange-looking Austin Sevens, with brightly-coloured home-built racing bodies, streaking along the road between Ely and Cambridge. Their builder was a lad named Ken Wallis, who went on to fly bombers during World War 2 and is now a Wing Commander with a very important job in the Royal Air Force.

He has never lost his inventiveness or brilliance as an engineer, and a few years ago decided he would try his hand at building a one-man autogyro. He started by buying plans of an American aircraft, but soon decided that he could produce a more businesslike machine, and designed a completely new rotor and control system. In the end, his little autogyro retained nothing of the U.S. design beyond having the same general layout. And it worked so well that Britain's new Beagle Aircraft Company decided it had possibilities as a mass-produced "flying motor-cycle".

Now known as the Beagle-Wallis WA.116, it is the finest machine of its type yet flown. A 65 h.p. McCulloch engine gives it a top speed of 115 m.p.h., yet it can be flown safely at about 14 m.p.h. and Wing Commander Wallis flew it past a crowd of cameramen recently with his hands and feet off the controls to demonstrate its outstanding stability. Being an autogyro, with unpowered rotor and pusher propeller, it cannot always take off and land vertically like a helicopter. But even when there is no wind, its take-off run is only 75 feet.

SCHOOL OPERATES AIRLINE

The children of one Croydon school are being taught their lessons in an exciting new way by an air-minded form-master. He has formed them into an "airline", with ground staff who are able, by hard work, to gain promotion to aircrew.

The history and geography of countries to which the youngsters "fly" are studied, and maths and science are introduced in connection with equipment such as radar, and problems such as distance travelled. Pupils who stay on after hours to learn more about specialised subjects are even handed out tea by a polite, uniformed stewardess.

SUPERSONIC AIRLINER

We hear a lot, nowadays, about the supersonic airliners of the future, but there is already at least one faster-than-sound airliner flying on everyday passenger services.

It is a Douglas DC–8, powered by four of the new 17,000 lb. thrust Pratt & Whitney JT3D–1 turbofan engines. During a test flight from the Douglas factory at Long Beach, California, to Edwards Air Force Base, on August 21, the pilot put it in a shallow dive at a height of 40,350 feet and passed smoothly through the sound barrier at a speed of over 660 m.p.h.

Special tracking cameras on the ground were used to confirm that the DC–8 had, in fact, become the world's first supersonic airliner.

BRISTOL WORLD-BEATER

There have been one or two faster research aircraft than the new Bristol 188, illustrated on this page, but none can rival its ability to fly at very high speeds for prolonged periods.

American rocket-powered research 'planes are carried to great heights under converted bombers and then launched for a few seconds of flat-out flying, but the 188 is a real aeroplane in every way. It will take off on its own (*Cont. on page 467*)

Books For Your Christmas Reading

GIVEN his first operational command of a submarine in H.M.S. *Rugged*, Lieutenant Peter Sinclair, R.N., leads his ship and her gallant crew through a welter of adventures in **"Sinclair in Command"**, the latest Submariner Sinclair episode from the pen of John Wingate, D.S.C. Wingate, who himself lived through dangerous patrols such as those he describes, uses his knowledge of the sea, and of the Royal Navy at war, to make this a gripping story of World War II. *Rugged's* adventures start on patrol from Malta with the destruction of an Italian U-boat and a German coaster loaded with supplies for Rommel's Afrika Korps. But that is only the beginning. An unknown terror that has been ambushing allied submarines has to be discovered and destroyed. Sinclair and his men take up the challenge. If you like a quick-fire story bulging with excitement, you will want to read **"Sinclair in Command"**. It is published by George Newnes Ltd., at 10/6d.

* * * *

John W. R. Taylor, who for many years now has been one of the most popular contributors to the *Meccano Magazine*, is the Editor of the 1962 edition of **"Aircraft Annual"** published, at 10/6d., by Ian Allan. Air Marshal Sir Robert Saundby, M.C., D.F.C., A.F.C., who was Deputy Air Officer Commanding-in-Chief, Bomber Command from 1943 to 1945, and W. T. Gunston, Technical Editor of *Flight*, are among the erudite contributors whose topics cover every aspect of the aviation field. The Editor himself introduces "The Year of the Space-Man" and Basil Clarke reminds us that even in the space age airships are still in use. The book's appeal is enhanced by its array of black and white illustrations and some outstanding colour plates.

* * * *

Hubert Phillips is the author of two excellent books, both from Arco Publications, which will be in wide demand this Christmastime. One is **"Indoor Games for Two Players"** which is primarily concerned with board games—Chess, the Chess War Game (Kriegsspiel), Draughts, Go Bang and Backgammon among them. The other, **"More Indoor Games for Two Players"** covers a fascinating selection of card games, word games and battle games which should help the reader to occupy many a leisure hour. The books cost 18/- each.

* * * *

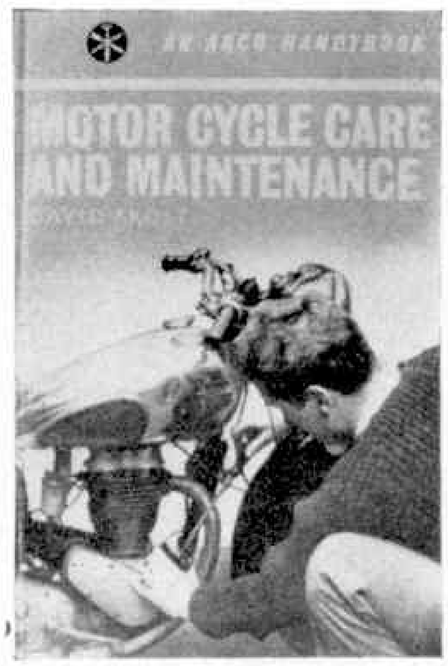
Published at 10/6d. by Burke, London, and of great interest to all who search for knowledge are two books in the "Science in Industry" series, both written by Leslie Hunter. No. 1, entitled **"Coal"**, relates the history of this important commodity and discusses its link with modern science. Up-to-date methods on coal-getting make most interesting reading when compared with the laborious, rough-and-ready methods of days gone by. **"Oil"**, second in the series, deals with the exciting developments that have taken place in man's search for a source of boundless power. Every aspect of the subject is comprehensively covered. Both books have a commendable clarity of text and the illustrations are profuse and absorbing.

* * * *

Another of the reprints of Jules Verne's remarkable stories which Arco Publications are issuing as the Fitzroy Edition, is **"For The Flag"** (price 12/6d.), one of his lesser-known works. It concerns a secret weapon—the Roch Fulgurator—in which immense destructive power is packed into a bomb of minute size. Its brilliant and half-mad inventor has been kidnapped by a gang of pirates, who want to use the weapon to defend their hide-out which they have made on an island in the Bermudas. Embittered by the world's neglect, the inventor agrees to fall in with their plans. In a postscript to the story I. O. Evans, F.R.G.S., who is editing this edition of Verne's stories, ventures upon a reconstruction of the Roch weapon based upon the brief details given by the author.

* *

Recent publications by Ward Lock include three books that will appeal to all younger readers and many older ones as well. Aimed at broadening the average child's understanding of the world about him, with its challenge and opportunities, is the **"Junior Pictorial Encyclopædia of Science"**. This is a comprehensive book which, in easy to read form, discusses subjects as diverse and important as astronomy and atoms, comets and cyclotrons, plants and plastics. Containing a wealth of illustrations it costs 17/6d.



At 15/- are published **"The Wonder Book of Nature"**, which provides a fund of knowledge for youngsters on the miracles wrought each day in the world of plants and flowers, animals, birds, beasts and insects, and **"The Wonder Book of Why and What?"**, which relates the strange and wonderful stories that lie behind such things as the placid facade of the sky or the inscrutable face of the Sphinx. Both these fine volumes are magnificently illustrated.

* * * *

"Motor Cycle Care and Maintenance" by David Frost (12/6d.) in the popular Arco Handybook series, deals with most of the problems which confront a motor-cycle owner who, for one reason or another, finds it necessary to do his own repairs. The author deals fully with four-stroke and two-stroke engines as well as lighting, ignition and the thousand and one other things which make up a motor-cycle. An invaluable addition to the enthusiasts' library. In the same series is J. G. Rayer's **"Repair of Domestic Electrical Appliances"** which offers a wide field of information on such important equipment as fires, radiators, cookers, heater appliances, washers, vacuum cleaners and—more in the teenagers' line—tape recorders, radio sets, amplifiers, record players, etc.

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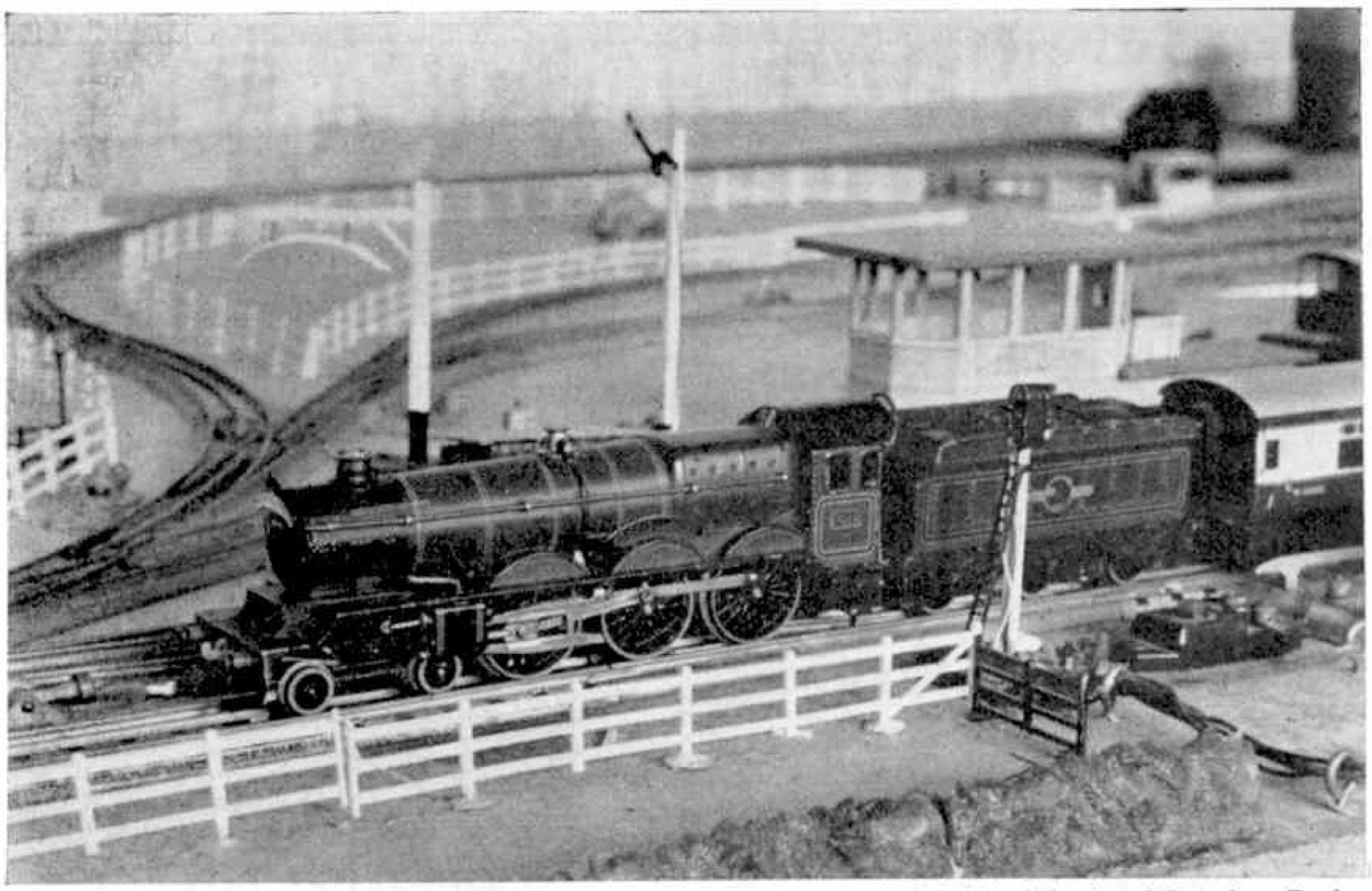
Further book reviews of special interest to readers who are railway enthusiasts appear in this issue on page 460.

Photographers' Page

H. G. Forsythe Writes About: CREATING REALISM



A close-up picture of Hornby-Dublo "Bristol Castle" on the layout of Richard Lewis of Langley, Bucks.

CLOSE-UP photography is fascinating, but it has its dangers. The greatest of these is limited depth of field. When you are working close to your subject, the zone of sharpness is only an inch or two at best. The smallest possible aperture, therefore, should be used to get as much depth of field as you can. Small apertures help, too, to reduce distortion caused by some supplementary lenses, especially those not made primarily for photography, e.g. spectacle lenses.

When photographing models—Hornby-Dublo Trains, for instance—try to position your subject so that it is broadside on to your camera, or nearly so. This helps to keep as much of your subject as possible in focus.

Choice of viewpoint

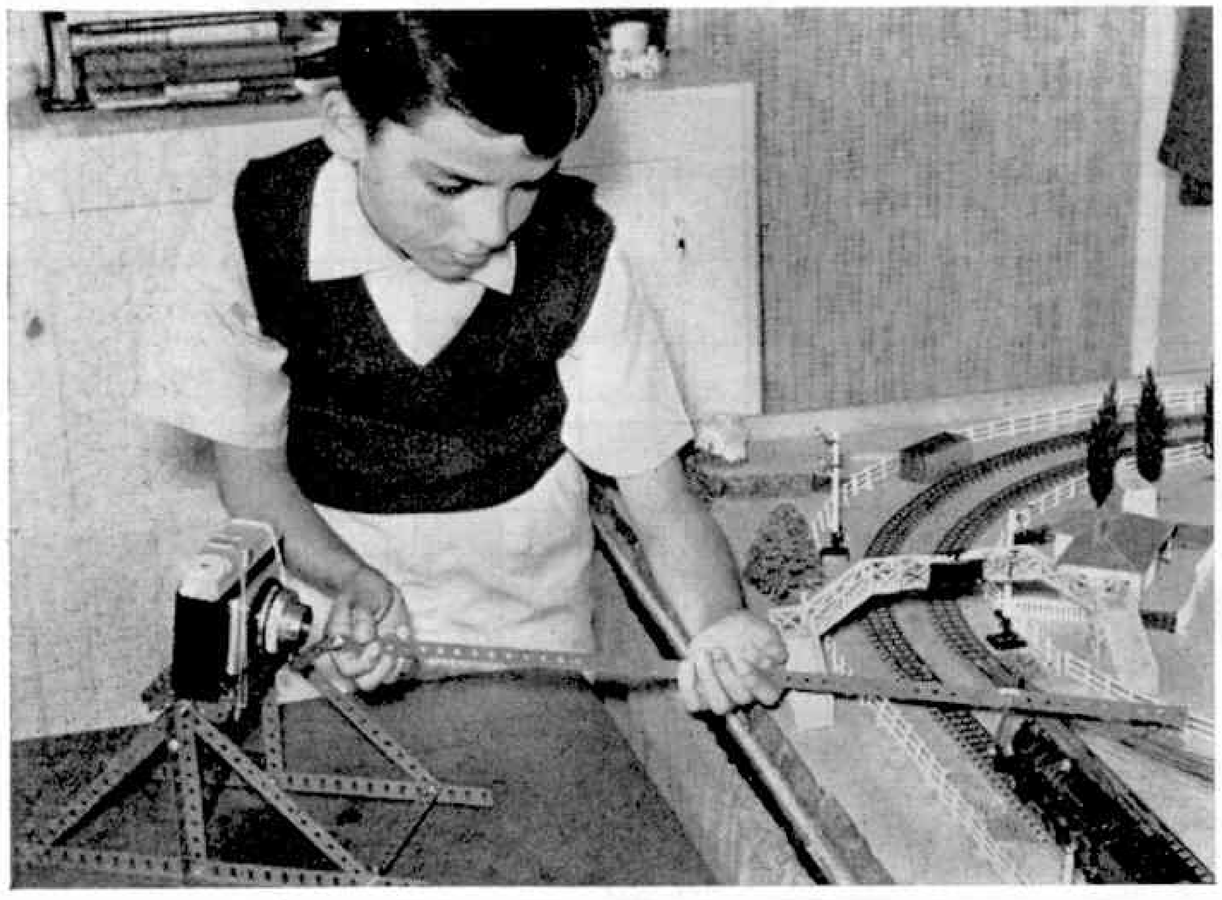
For utmost realism choice of viewpoint is important. A good rule is to place your camera as near as possible at the same relative height as it would be if you were actually photographing the real thing. Look at our picture (above) of *Bristol Castle*. If this had been a real railway scene, the camera man would have been standing in an elevated position which overlooked the line.

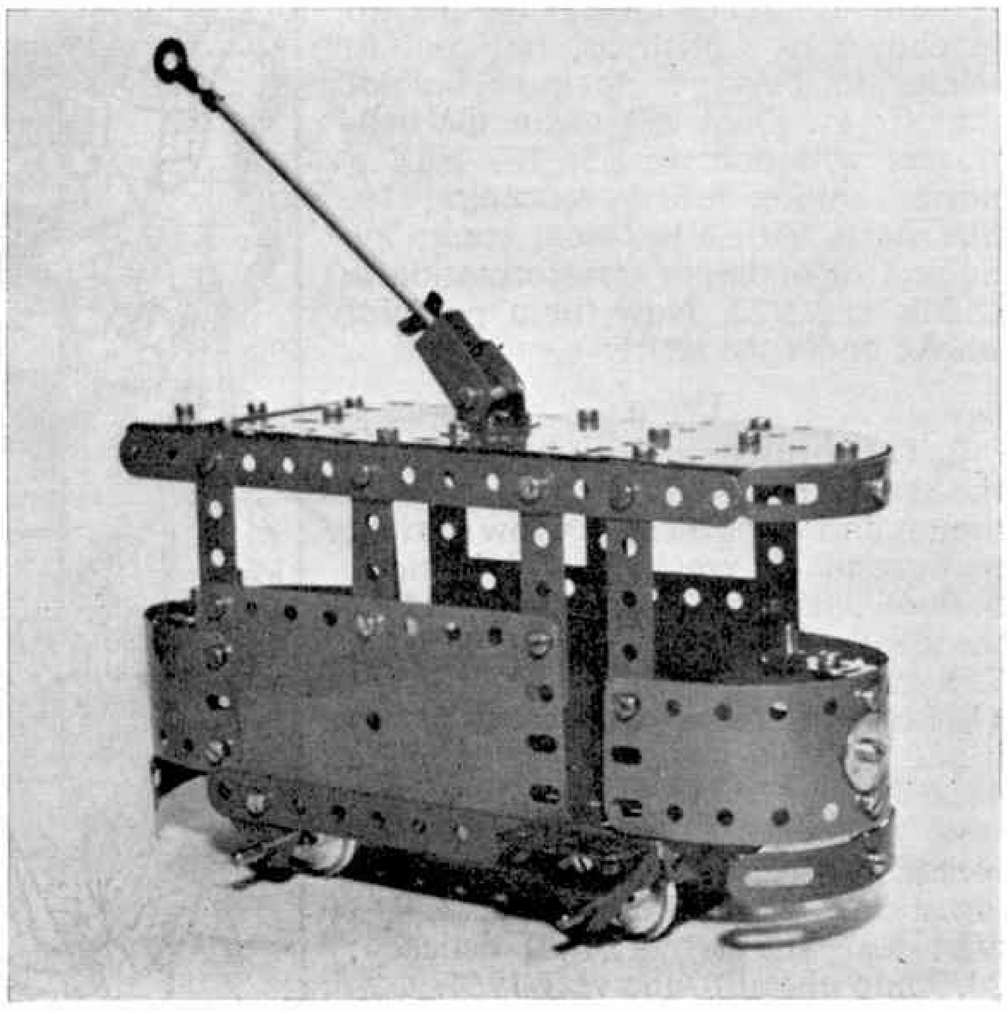
The second photograph shows how the picture was taken. The camera was fitted with a 2 dioptre supplementary lens and the distance between camera and subject is shown being set by the use of a Meccano Distance Gauge, which you make yourself. The gauge consists simply of two $12\frac{1}{2}$ inch Perforated Strips bolted together. At one end a short Perforated Strip is bolted on by means of an Angle Bracket. At the other end a Slide Piece and a $6\frac{1}{2}$ inch Axle can be moved to any desired position depending on the supplementary lens in use. Distances can be measured accurately on the Distance Gauge, when making it up, and the appropriate holes marked. In this example the Slide Piece and Axle are at the 20 inch position. By now you will see how very useful Meccano can be to photographers—a point to bear in mind at Christmas time.

Mount camera firmly

Exposure for close-ups out of doors in good weather is no problem, but indoors artificial light must be used. It is possible to use ordinary household lighting, a reading lamp, for instance. A good place for a single light is fairly high up behind the camera position. Shadows cast by a light from there give a "sunlight" effect. A 75-watt lamp three feet from your subject needs an exposure of between one and two seconds at *f* 11 when using a medium speed film. The camera must be mounted firmly on the Camera Stand, or on a tripod, for such long exposures and, if possible, a cable release should be used.

Below (left): Richard Lewis using a Meccano Distance Gauge sets the distance between the camera and his subject in preparing to take a picture. His camera is mounted on the Meccano Camera Stand described last month. (Right) This shot of a Meccano model tram was taken by artificial light, using a 1 dioptre supplementary lens.





HERE ARE PUZZLES FOR ALL THE FAMILY!

CHRISTMAS FIGURES FOR FUN

By J. A. H. HUNTER

HOW MANY CARDS?

Christmas cards? Well, they save a lot of letter writing! Take John, for example. If he'd received this year eleven more than half as many cards as he would have sent if he had sent ten more than he received last year, he would have sent seventeen fewer than three times as many as he would have received this year if he had received one more than half as many as he would have sent if he had sent eight more than half as many as he received last year.

In fact, this year he would have sent as many as he received. But can you work out how many cards he received last year?

* * * *

CLUES TO CROSSWORD

Across

1. Suitable present to put first in 11 down? 8. Christmas recreation of politicians? (5, 5); 9.—but this reflects their more earnest side; 10. The greater and yet the smaller part of 14 across; 12. A dedicated person puts nothing on an upturned table; 14. Heard in church at Christmas, but not in school; 15. Turkey? Not quite, but not far off; 17. Does this mean the bell-ringers will not work?; 18. He's a novice among hearty roisterers; 19. She starts with a seasonal song; 21. Subject of midnight transformation is child's play; 22. Now for a peaceful smoke under the sink!

Down

2. The shrub bears fruit to symbolise the season (5, 5); 3. Heroic aspect of mountainside picnics; 4. How a river may bend to reach its destination; 5. Book whose praises are sung; 6. Not the ideal participant in 8 across (3, 5); 7. Even carouses have their purposes; 11. Before Christmas, shops attend to it and children put it (8, 2); 13. Air's done in these to produce weather forecast. 16. Have some more? Yes, please!; 17—then if you take this, your digestion may be improved; 18. Do after tea. It's a matter of delicacy; 20. Jump ahead to the year 1964.

LETTER PUZZLE

In all the Christmas hustle and bustle you may yet have time for this quite tantalising sort of fun.

Each letter here stands for a different figure, and XMAS consists of the figures 1960—but not in that order.

So what is XMAS?

```
  M A N Y
  M A K E
  X M A S
  M A K E
-----------
M E R R Y
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* * * *

THE JEWEL BOX

"Oh, it's beautiful!" Olive exclaimed, taking the jewel box from its wrappings. "A lovely Christmas present."

It was indeed a work of art, rectangular and sleek in rich shagreen. "It's empty, of course," Tom laughed. "All the gems are outside."

His wife smiled happily. "I know," she told him. "Fancy having my initial set in the lid in diamonds!"

"They're small but they are real. It was a problem to decide exactly where that initial should be," chuckled Tom. "Finally we agreed to have its centre nine inches from one corner, two from the opposite corner, and six from the corner between."

"Horribly technical." Olive stroked the shiny surface. "Don't tell me you worked out the distance from the fourth corner too."

Tom hadn't done so. Can you?

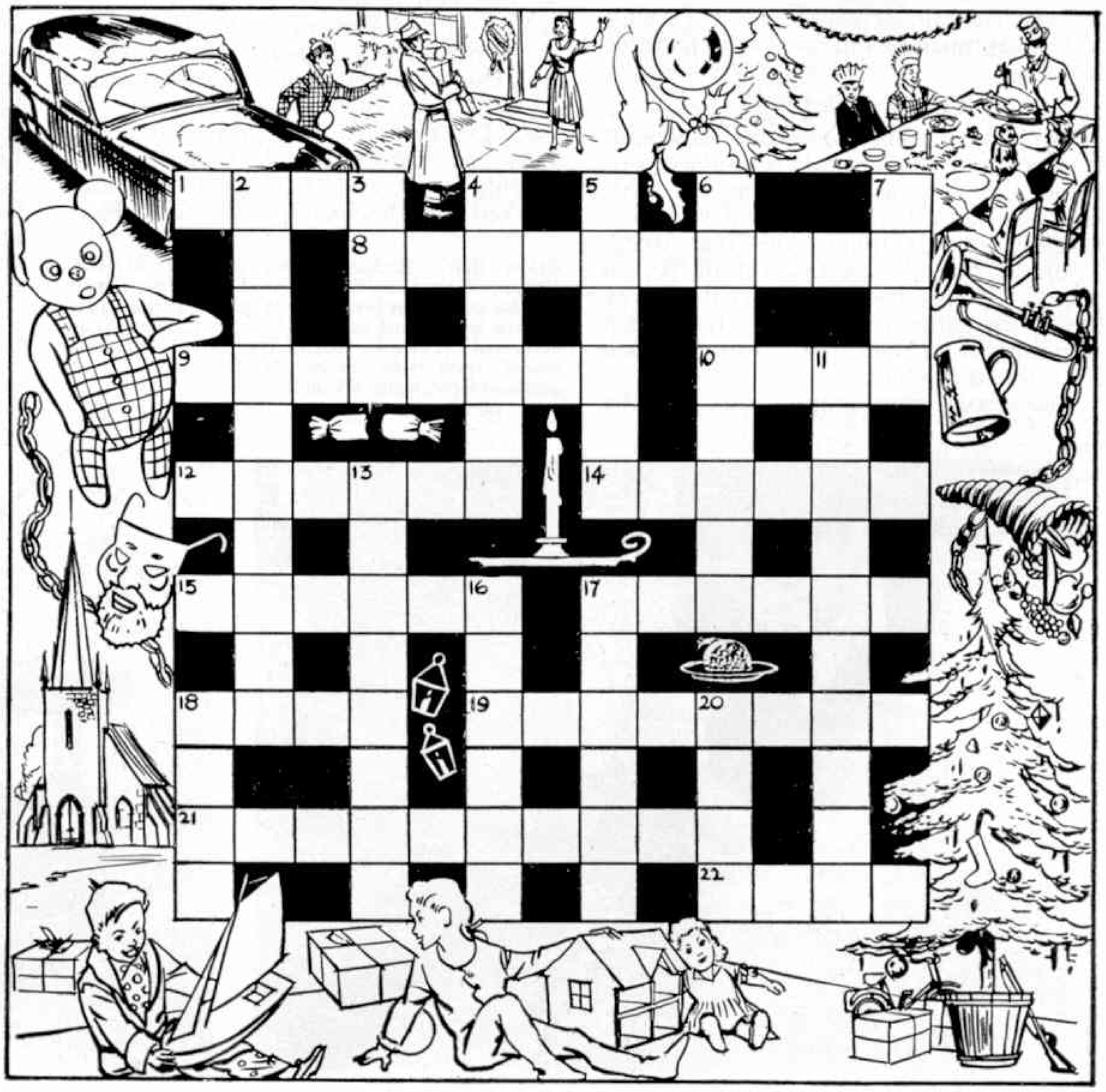
All answers on page 467.

* * * *

Teacher (to Johnny): Can you tell me how iron was discovered?

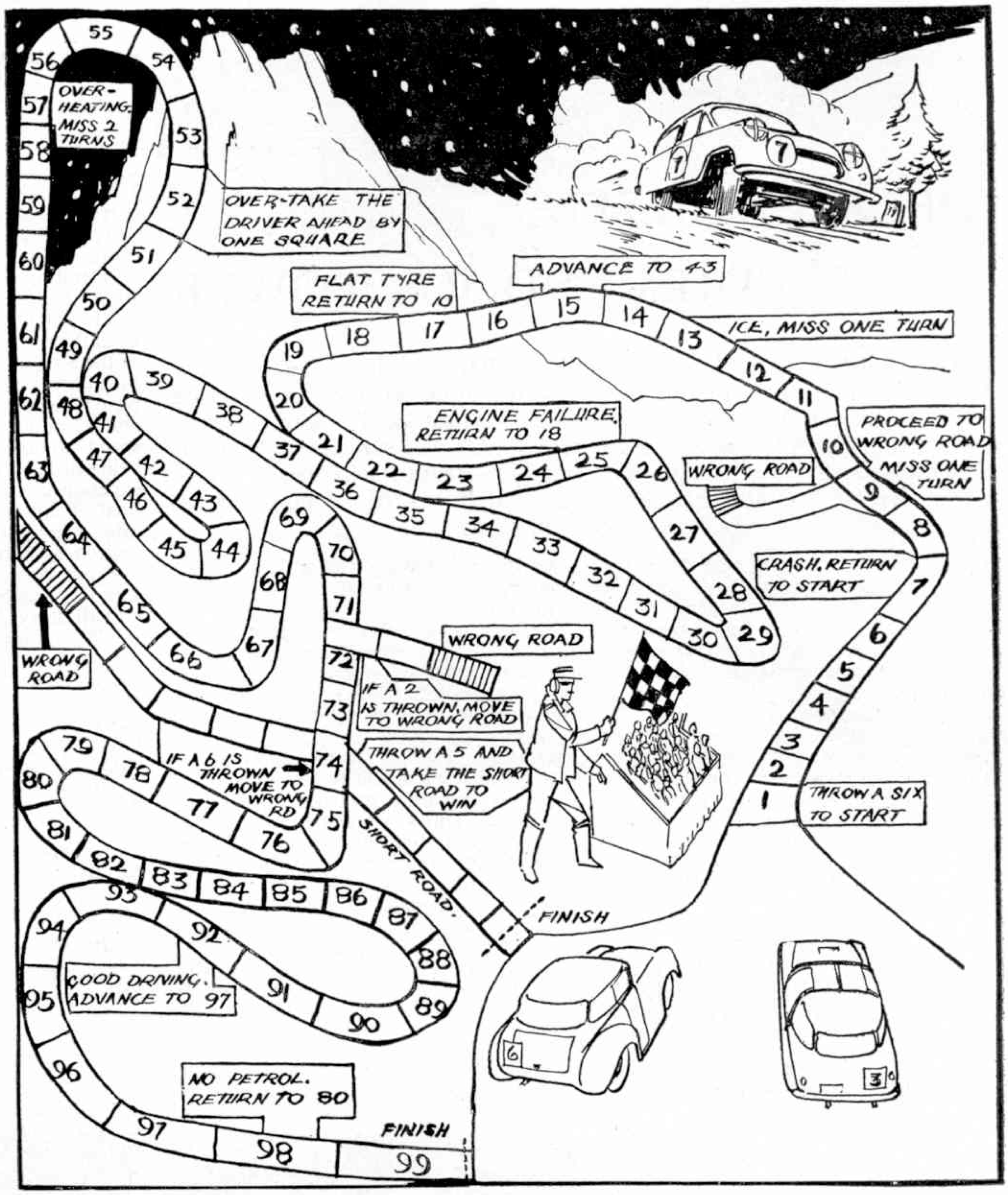
Johnny: Yes, miss. I heard my dad say the other day that they smelt it.

Now Try The Crossword



For The Juniors: Can You Win The Car Rally?

The race game on the right gives you the chance to join in the thrills and spills of a Christmas car rally across treacherous mountain roads. All you need is a dice and a different coloured counter for each "driver" taking part. You throw the dice in turn, and you must get a six to start. It is a happy idea to have a small prize for the winner.


OVER-HEATING. MISS 2 TURNS
OVER-TAKE THE DRIVER AHEAD BY ONE SQUARE
FLAT TYRE RETURN TO 10
ADVANCE TO 43
ICE, MISS ONE TURN
ENGINE FAILURE. RETURN TO 18
WRONG ROAD
PROCEED TO WRONG ROAD MISS ONE TURN
CRASH. RETURN TO START
WRONG ROAD
WRONG ROAD
IF A 2 IS THROWN, MOVE TO WRONG ROAD
IF A 6 IS THROWN MOVE TO WRONG RD
THROW A 5 AND TAKE THE SHORT ROAD TO WIN
SHORT ROAD
THROW A SIX TO START
FINISH
GOOD DRIVING. ADVANCE TO 97
NO PETROL. RETURN TO 80
FINISH

* * * *

TWELVE FAMOUS MEN

Below are the names of twelve men of the past and present. They include inventors, explorers, sportsmen and film stars—but the names are all jumbled up. Can you straighten them out; if not, perhaps Dad can help! You will find the answers to all the puzzles on page 467.

1. EDTREX
2. NOSIDE
3. DRIVAALSO;
4. TAMATHS
5. NILYBERD
6. TENSHACKOL
7. TONIREP
8. DABOGRE
9. SPENTGRIT
10. TRANSIA
11. MONICAR
12. UDENSMAN

* * * *

WELL-KNOWN PROVERB

Below is an alternative form, in verse, of a well-known proverb. Do you know what it is?

Adduce the equine quadruped
To element aquatic;
Ingurgitation, it is said,
Must still be automatic.

* * * *

FIND THE PORTS

Below is a list of 15 ports, a number of them in Great Britain, the remainder in various parts of the world. All the names have been jumbled to give you a test. Can you sort them out? You will find the answers on page 467.

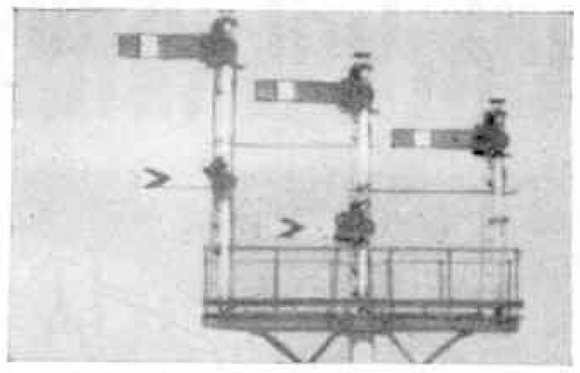
1. HUTSMOPNOAT; 2. BABMOY; 3. MEYHASH; 4. SALGWOG; 5. SAILAPORVA; 6. TOMHUTSROP; 7. PIEPED; 8. NONLOD; 9. DAYLEHOH; 10. GANPENHOCE; 11. STROLIB; 12. OPRELOVIL; 13. TENDOS; 14. TENPACOW; 15. PANGREOSI.

If you want a good game for a Christmas party, once you have found the answers to this puzzle write the jumbled names on separate post cards, numbering them and placing them in various positions round the room. Then hand out pencils and paper and see which of your friends is first to get the 15 correct answers.

* * * *

An American tourist in London was caught in one of the city's famous fogs. Hearing footsteps, he called out, "Could you please tell me where I'm going?"

"Into the canal," replied an unhappy voice from the mist, "I've just come out."



RAILWAY NOTES

Contributed by R. A. H. Weight

"DELTIC" DIESELS'

TREMENDOUS POWER

THE English Electric Co–Co "Deltic" 3,300 h.p. diesel-electric locomotives numbered in the D9000 series, now working or entering service on the East Coast route and hauling fastest Leeds expresses, etc., to and from King's Cross, are setting remarkable new standards of power, acceleration and speed along a line on which steam Pacific performance of considerable flexibility has long been, and still is, of a high order for the most part, within the 2,000–2,500 h.p. limits.

In the January, 1959 *M.M.* I described a splendid performance by the famous A4 4–6–2 *Mallard* apparently in perfect condition on the southbound morning *Talisman*, a handsome 9-coach set weighing about 325 tons gross and the fastest Edinburgh – Berwick – Newcastle – Darlington – London express, when the mile-a-minute Darlington–King's Cross schedule was almost kept despite a loss of 19 minutes mainly due to track renewal or maintenance work. This included an average of 72½ m.p.h. for 92 miles south of Grantham and normal service maximum speeds of 90–91, with some fine uphill work, all achieved with comparative ease by the great engine.

In October last, I rode this train again. The same able and determined driver was in charge from Newcastle—Arthur Davis of King's Cross depot, accompanied by Fireman Brian Graves, both good friends of mine. But the locomotive was "Deltic" No. D9006, stationed at Haymarket shed, Edinburgh, working through to London. Several of these diesels are rostered to do this in each direction daily.

It was an unfortunate day for delays, although it was the astonishing recovery from all of them that made the journey more and more exciting, providing a number of records, at any rate as far as my own extensive experience goes! Not only did we cut the 232-mile, 232-minute time south of Darlington, starting 12 minutes late and reaching King's Cross three minutes early—in spite of two signal stops and four severe slowings for reconditioning work—but the start from Newcastle had been 18 minutes behind time owing to a freight train having "stuck" and caused a temporary hold-up on the way in from Edinburgh.

There was careful observance of all the usual speed restrictions through important stations and so on, but out in the country, where it was safe to do so, the controller was opened more widely than is usually necessary on those extremely powerful machines. I was recording with my watches maxima of 100 m.p.h. or just over, along five separate stretches, the first of these near Thirsk, on nearly level track; similarly over slight undulations between Huntingdon and Hitchin. Down the famous Stoke Bank, after we had been stopped by signals, outside Grantham, 93 m.p.h. was averaged for 20 miles, and 100 for seven and a half miles! The second lunch service was in progress, with perfectly comfortable and steady travel as I found it to be both in the ordinary carriage and the restaurant car.

The uphill running was perhaps even more striking. There was, for instance, acceleration from the service slack through Retford at 55, to 71 m.p.h. up several miles at 1 in 178–200; and, from passing Grantham slowly, to 72 m.p.h. at the top of the 5-mile rise to Stoke Summit. Later, the surmounting of the 1 in 200 gradient past Hitchin to Stevenage at between 90 and 92 m.p.h., after an approach at high speed, almost "took my breath away", being at least 10 m.p.h. faster than I had experienced or even heard of before! The final 59 miles from passing Huntingdon into King's Cross, including a gentle approach, were reeled off in 48¼ minutes.

From Newcastle, left at 11.5 a.m. to London, reached at 3.22, including stops and all delays, the 268 miles were covered in 257 minutes—just over four and a quarter hours—averaging over 62 m.p.h. overall. The fast timing for the 7.50 a.m. express, introduced last September, "Deltic"-hauled over the same course, is four and a quarter hours with two booked stops at Durham and Darlington.

This thrilling trip, and another to be described in an early issue on a much heavier train, proved that in expert hands these Type 5 locomotives have a margin for delays when working the *West Riding* and other "flyers", attaining outstanding speeds often uphill and down.

ABOARD THE "ELIZABETHAN"

Apart from the period during the war, and just after, the longest non-stop run in

The up "Talisman" passing York, in charge of "Deltic" diesel No. D9004. This and the upper photograph on the next page are by C. Ord.

No. 60009 "Union of South Africa" near York on the up "Elizabethan" run described in the accompanying notes.

Southern 0 – 4 – 4 tank No. 32 "Bonchurch" arriving at Havensbridge (I.O.W.) crosses another train in the opposite direction. Photograph by T. D. Fry.

the world—393 miles—has been scheduled every summer since 1928 between London, King's Cross, and Edinburgh, Waverley. It has been performed by Gresley Pacifics, first of the original A1 class, all now modified to A3, and then the newer A3 built as such, up to 1939 when the main 10.0 a.m. departure *Flying Scotsman* in each direction was the train concerned. When the non-stop service was resumed after the war, first by the *Capitals Limited* later named *The Elizabethan*, in honour of our present Queen, it began running each season as an advance portion of the 10.0 a.m. up and down, A4-hauled. For all journeys the unique corridor tenders have been attached to enable drivers and firemen to be changed half-way, north of York, in view of the long distance and arduous nature of the duty. While off duty they have travelled in a reserved compartment, worn private clothes and lunched in the restaurant car.

Soon after the introduction of the non-stop run in 1928 I made the northward journey very successfully when the engine was No. 2563 *William Whitelaw*—just withdrawn as A3 No. 60064 *Tagalie*. The original name was transferred to an A4 and there was, of course, a general locomotive renumbering by classes on the former L.N.E.R. in 1946–7. We took, as then booked, over eight hours, so it was easy work. Gradually, in the 1930's, the time was cut to seven hours; during the last few years, up to the present day, with a rather lighter load, the 6 hours 35 minutes allowance has required almost a 60 m.p.h. average throughout, and it has been a first priority train.

As there seemed some doubt, in view of dieselisation—and, therefore, the absence of corridor tenders—whether there would be another opportunity of riding the "Non-stop", as we have long known it, behind a streamlined 4–6–2, I made a point of boarding the up *Elizabethan*, with the kind co-operation of the British Transport Commission, during Festival time in Edinburgh at the end of August last. The choice 10-coach train, starting at 9.45 a.m., was the next express after the *Talisman*, just described, along the same route to London. It weighed about 370 tons all found and the Scottish locomotive was No. 60009, *Union of South Africa*.

It was a beautiful morning to enjoy the grand marine and other scenery as we travelled past the cliffs, and the great curves on each side of the Royal Border Bridge between Berwick and Tweedmouth, having crossed the actual Anglo-Scottish boundary a few miles further north.

Before noon we sighted the great industries and bridges on Tyneside, glided through No. 10 platform line at Newcastle, then, not long afterwards, looked for the impressive hill-top views of Durham Cathedral and Castle. There was a slowing for repair work on the hilly stretch just beyond; some time had been lost also by rather restrained running for so fast a timing.

However, my friends Davis and Graves took over from the Edinburgh footplate crew near Thirsk, almost half way, and would certainly have won back to schedule had conditions permitted, but most unusual misfortune intervened! In order to keep the boiler supplied, it is essential that water should be picked up in adequate quantity, say five times, on the way from the track troughs. Unfortunately, the mechanism of the scoop under the tender, which the fireman raises and lowers at the right moments by means of a lever, became largely ineffective as the journey proceeded, so the tank was only partially filled at the most. All the same, there were 80 m.p.h. sprints in places, but as extra speed restrictions and signal delays were encountered each side of Newark, involving increased fuel and water consumption while regaining speed as quickly as possible, the driver reluctantly decided that a stop must be made at the water crane near Grantham South signal box, clear of the platforms and, of course, protected by the station signals.

Taking in nearly 5,000 gallons was a rather lengthy proceeding, so the *Elizabethan* was now somewhat behind time. There was a clear road thereafter apart from signal slowing approaching Peterborough; the 105 miles from restart at Grantham to the stop in King's Cross were covered in 100 minutes, with seven minutes made up and including a 99 m.p.h. maximum near the foot of the Stoke descent. This was not as fast throughout as the two previously-mentioned runs, but excellent under difficult circumstances.

The engine was, at that time, making the long trip daily for several weeks and during the latter part of the run, with more than 300 miles already covered, the fireman's task could be most arduous, as available coal supplies might have to be carried from well back in the tender. Frequently in each direction an arrival at or slightly before time has been effected, in spite of quite considerable delays.

LOCOMOTIVE PRESERVED

Steam locomotive No. 62660 *Butler Henderson*, "Director" class 4–4–0, has been restored to its former condition at Gorton Works and painted in its pre-grouping Great Central livery of green. It has been handed over to Mr. J. H. Scholes, Curator of Historical Relics, British Transport Commission, for preservation.

THE BLACKPOOL TOWER ASCENT

EVERY day of every week for at least seven months of the year thousands of pairs of eyes gaze skywards in the gay, bustling seaside resort of Blackpool. They are focused on one of Britain's best-known landmarks—Blackpool Tower—and usually they rest not merely on the huge outline of the building itself, but on the twin lifts which glide smoothly up and down between the massive, Meccano-like girders which rise hundreds of feet into the sky.

The Tower itself is, of course, world-famous, not only because of its structure, but for the widely-varying pleasures offered to visitors in the buildings which surround the Tower itself. In my schooldays, as each Christmas came round, we made what was almost a pilgrimage to the Tower each Boxing Day, thrilling at the sight of the glistening Tree whose branches reached to the very top of the lofty Tower Ballroom. In those days, your admission ticket entitled you to a gift from the tree, the presents being arranged in various sections so that, according to the "luck of the draw", you might get a box of soldiers, a book or a gleaming model battleship.

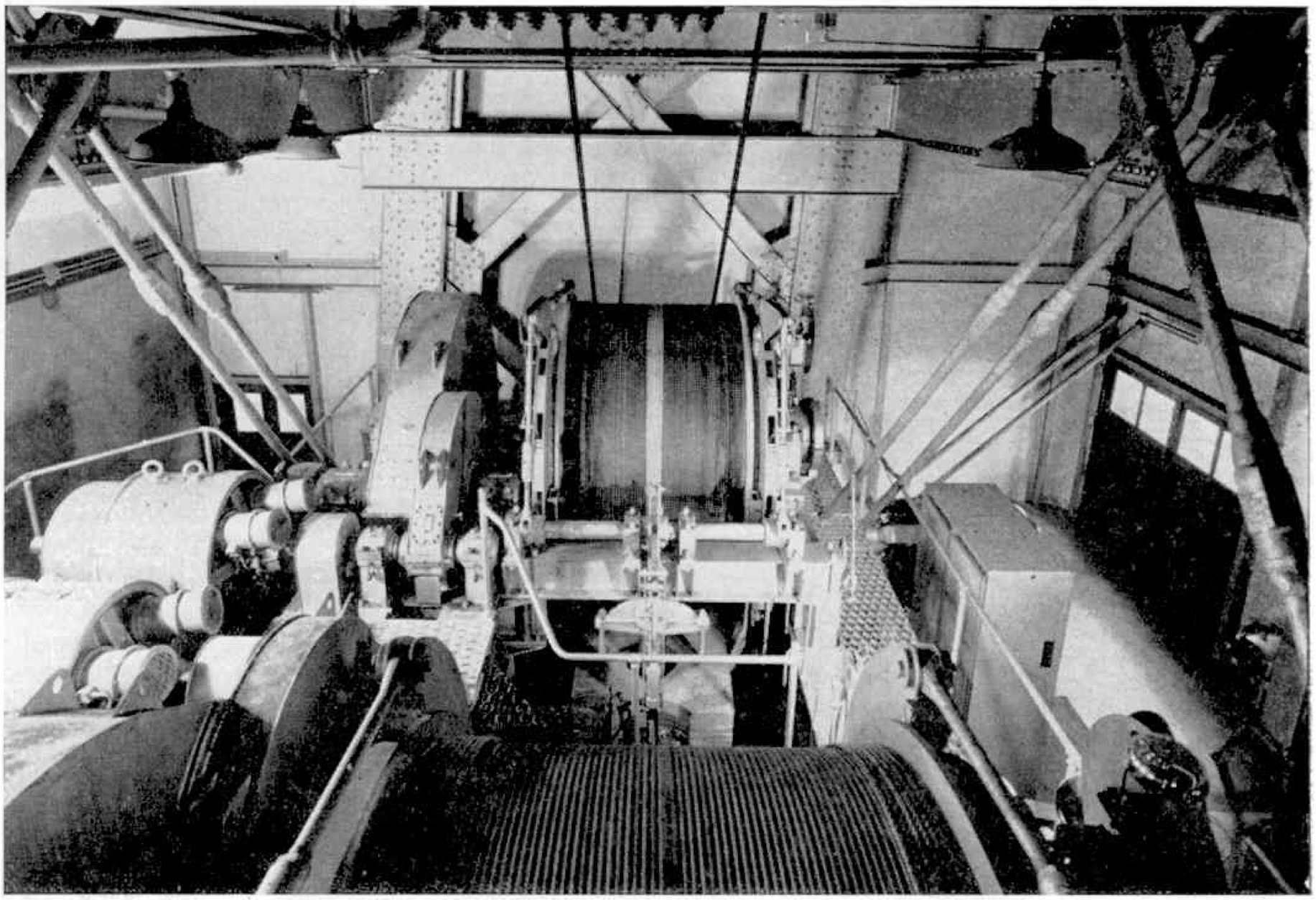
But the Tower's delights are known to countless thousands of people. I want to put the spotlight on what the building represents in an engineering sense for, without doubt, its erection—which swallowed up 2,493 tons of steel, 93 tons of cast iron and 5,000,000 bricks—was a triumph of skill and labour and a tribute to those who had the foresight to build it.

In particular I want to introduce you to the machinery which hauls the lifts up and down the Tower. If one might digress for a moment, I suppose there never was a Meccano boy who had a sufficiently large outfit who did not attempt to build the Blackpool Tower—or its French counterpart, the Eiffel Tower—and I will wager that in either case one of the great attractions was to fit moving lifts inside the building.

The huge cars which make the Blackpool Tower Ascent hold 24 passengers and a driver. For 60 years they were operated by hydraulic equipment, but at the end of that time, in 1952, it was decided to discard the old system in favour of one which was electrically-operated. The conversion began in that year and was finally completed in 1957, and during the whole of this period no running time was lost. The main contractors for this scheme were the Otis Elevator Company Ltd., and the Sub-Contractors Messrs. Robey's of Lincoln, the Otis Company being responsible for the electric equipment, generators, control panels, etc., and Robey's for the main winding drums and brake system.

When it was decided to install the electric equipment it was necessary, because of its size, to build a new lifthouse on the roof of the building, and since this position was not accessible to the street every item of equipment had to be broken down and carried up through the building into position.

Above: Blackpool Tower from the seaward side. One of the lifts can be seen just beneath a cross girder near the top. Right: Looking up one of the lift shafts. Stairs used for maintenance are clearly visible. These photographs, and that on the opposite page, are published by courtesy of the Blackpool Tower Co. Ltd.



Inside the Tower Ascent control room. Photograph shows the two huge winding drums that regulate the rise and fall of the lifts.

I was able to see this fine new haulage system one day in early October when, during a business trip to the Fylde coast, I visited the Tower Company's famous building.

It was a cold, blustery day as I drove along the seaward route to Blackpool and a rising wind, which was later to turn into a near-gale, lifted the sand from the dunes which lie between the sea and the main road and hurled it into the roadway ahead of me. I could even feel my car rocking with the force of the wind.

At the Tower Building I was received by Mr. Freddie Brown, the Blackpool Tower Company's Publicity Manager, who pointed out that the season was drawing to its close and that the lifts had actually stopped running so that the usual maintenance could be carried out. As you can imagine, this is a very big job indeed on a structure such as the Tower where the girders have to be chipped, scraped and repainted. It may interest you to know that every year the amount of paint used on the structure itself is over four tons of red lead and one and a half tons of red oxide.

I told Mr. Brown how disappointed I was that the Ascent was not working that day, and then came one of those decisions for which the Blackpool Tower Company are famous, for they believe the customer is always right. After a brief conversation on the telephone with a colleague, Mr. Brown turned to me and said, "We are putting on a lift specially for you."

And so it was that, only a little while later, I found myself sitting on one of the plush seats at the foot of the Tower Ascent, waiting . . .

First of all spidermen had to be sent up the Tower to make sure the road was clear, for maintenance had been carried out that morning, and this precaution is always taken before the lift is put into operation. Then a crew of attendants wearing greatcoats were summoned to man the Tower Top, and, six in number, they trooped into the lift, when it eventually arrived, with Mr. Brown and myself. Steel blinds were lowered at either end of the cage so that our view was restricted to the windows running along either side. In normal conditions there would be an all-round view through the two ends of the lift cage.

It was an exhilarating feeling as the cage began its journey. Apart from a certain minor cacaphony, caused by the wind as it rattled the cage, there was nothing at all to worry about.

In almost no time we were at the top: just for the record, it takes the lift about one minute 55 seconds to accomplish this. As we stood there, one could sense just the slightest sensation of movement beneath one's feet and, of course, it is a fact that the Tower does sway in a very high wind. During a 70 mile an hour gale, for instance, the sway is estimated at one inch. For some minutes I looked down on to Bank Hey Street and the promenade, where passers-by looked no bigger than tiny dolls and vehicles like Dinky Toys. Then we were on the way down, but this time our journey was broken at the 85-foot level so that I could see the huge winding drums which haul the cages.

Steel cables

The two lifts are hauled by four $\frac{13}{16}$ inch steel cables with a breaking strain of 20 tons each. From the car to the counterweight are five $\frac{5}{8}$ inch steel cables with a breaking strain of 12·5 tons each. The flying counterweight is suspended by a 2:1 rope, its weight being 14 tons. Since the car's weight is eight tons, this shows the car to be one ton out of balance to the counterbalance, so that the lift car can always be returned to the ground should there be a failure of supply.

The massive winding drums round which the steel cables are hauled weigh about 20 tons each and are eight feet in diameter. The driving motor is a D.C. shunt-wound machine of 120 h.p. The original cars used in the hydraulic days are still in service, but have been improved in appearance.

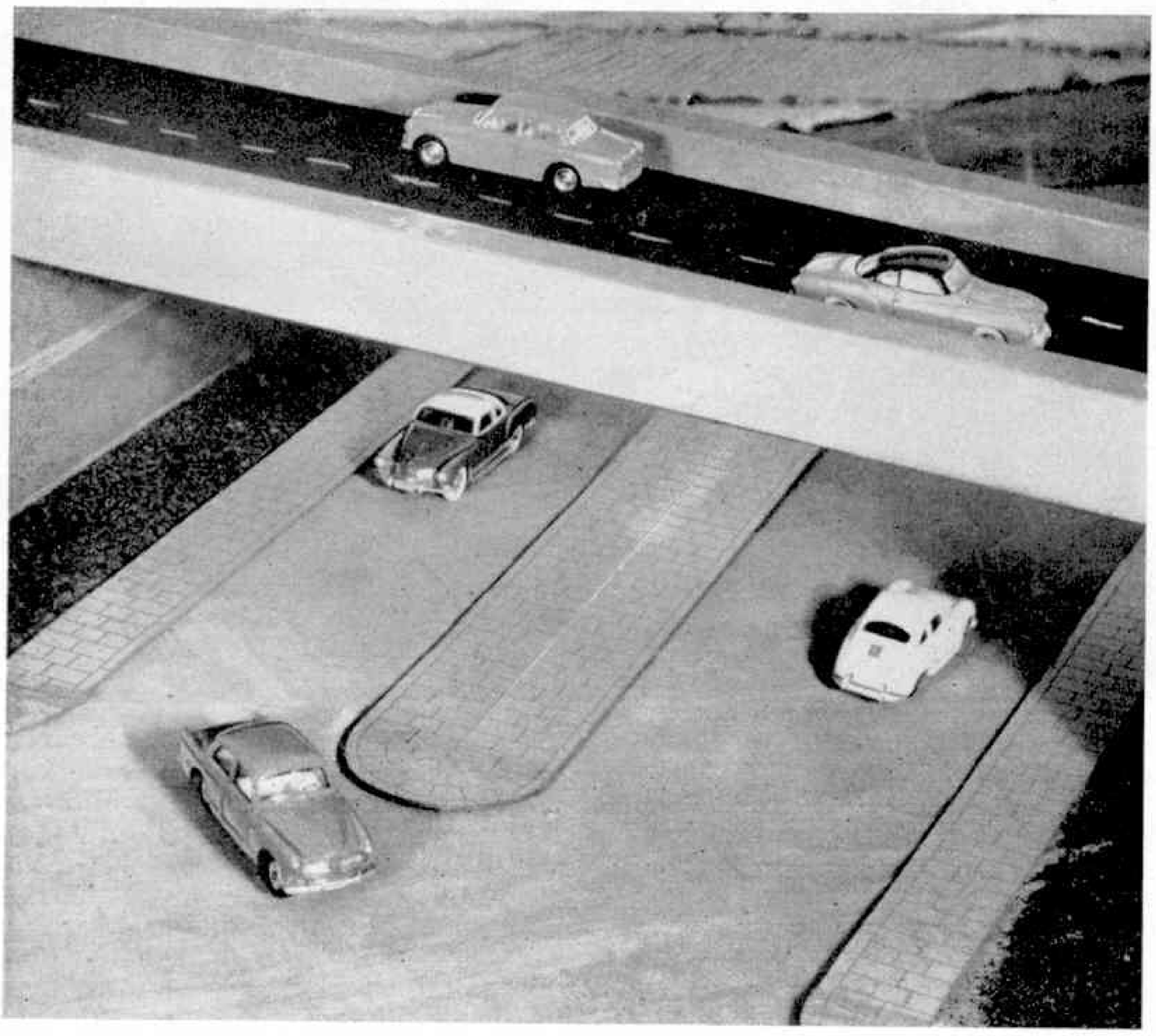
Safety devices

There is a rope safety device attached to the car suspension so that in the event of any one of the four main hauling ropes becoming slack, or being out of tension with the lift car, brake shoes are applied to the main structure and the lift is held firm. There are, of course, other safeguards. If, for instance, a power failure takes place while the lift is in motion, a brake solenoid is de-energised and this applies the main winder brakes. Overspeed in any direction is covered by a governor and if it exceeds the normal speed by 20 per cent., the brake is applied. Should the car become jammed in the shaft while travelling upwards, one of several devices will trip the control circuit; if it is travelling down the Tower, the slack rope device operates and trips the control circuit.

Four brake shoes are fitted to each winding drum and are so designed that any one pair will hold a fully-loaded car. Should a lift be made inoperative in any part of the shaft it can be returned to ground level by a hand-operated brake release in the lifthouse.

So far as the public is concerned the total distance travelled by the lift cars is from the 65 foot level, where the Ascent pay box is situated, to the 380 foot level at what is called the Tower Top. This is really a misnomer, for there are three other levels which are open to the public, who must make these further ascents by staircases. The actual apex of the building is the top of the flagstaff—518 feet 9 inches from the ground.

DINKY TOYS NEWS



Pictured here with a friend is Dinky Toys collector Stephen Hatcher (left), of Romford, Essex. Both boys proudly hold a Dinky Toys model.

New Model Has A Swedish Background

WELL, December is here again and my first pleasant task this month is to wish all my readers a very merry Christmas with lots of joy and happiness during the festive season.

Christmas is a time for laughter and rejoicing and for the giving and receiving of gifts. How many enthusiasts, I wonder, will be given Dinky Toys as presents?—the great majority, I am sure; and many will be hoping to receive our latest model which is being released in time for Christmas.

Latest addition to the Dinky Toys range, the Volvo 122S, is seen cornering in the picture above.

It is a miniature of that very fine Swedish car the Volvo 122S, and is pictured in views on this and the opposite page. We have had very many requests for this model from enthusiasts both in this country and abroad. The actual vehicle on which it is based is manufactured in Sweden by Aktiebolaget Volvo of Gothenburg and is fast becoming a popular car the world over. It is fitted with a four-cylinder, overhead valve engine, and has a fuel tank capacity of $9\frac{7}{8}$ Imperial gallons, which guarantees a lengthy run without the need to refuel. Its overall length is 14 ft. $7\frac{1}{8}$ inches and it is 5 ft. $3\frac{4}{5}$ inches wide. An important aspect of the actual vehicle, in these days of high speed motoring, is that it has fittings for safety belts.

Now for a quick description of the Dinky Toys model which is No. 184 in our list. Measuring $3\frac{13}{16}$ inches in length it is equipped with all the latest Dinky Toys fittings—windows, seats, steering wheel, four-wheel suspension and directional control or, as it is more colloquially known, fingertip steering. It is finished in red gloss with silvered bumpers and radiator grilles.

BY THE TOYMAN

The picture at the top left of this page shows the Volvo in a fly-over scene somewhere on the continent. The lower road

Eleven-year old David J. K. Halliday, of Catterick Camp, Yorkshire, pictured below, has been an ardent collector of Dinky Toys since he was 18 months old. He has taken the "Meccano Magazine" regularly since he was five and is not only a keen Meccano builder but has a large Hornby Train layout as well. David is a pupil of St. Olave's School, Ripon.

A close-up view of the new Dinky Toys saloon which is based on a famous Swedish prototype.

is the end of a motorway and the fly-over is carrying a less important road above it. The Volvo can be seen turning off the motorway and heading for one of the roads leading away from it. Great care is needed at this point as crossing traffic has to be faced. Another model of the Volvo can be seen travelling along the fly-over and this particular view emphasises the powerful yet elegant lines of this vehicle. Other models shown in the scene are the Volkswagen Karmann Ghia (No. 187) on the fly-over itself, and the Porsche 356A Coupe (No. 182), with another Karmann Ghia on the main motorway.

The new vehicle is seen in close-up in the picture above and the minute detail of the radiator grilles is evident from this view.

I receive many photographs from enthusiasts showing themselves and their models, but one of the best I ever remember receiving is that at the bottom of this page. It was sent in by Mr. Bertrand Harris of Westerhope, Newcastle-on-Tyne, on behalf of his nine-year-old son Lennard, who is a keen Dinky Toys collector, possessing a comprehensive array of about 60 models. You may have guessed from the highly realistic effect it provides that the background is not just a painted backcloth. It is, in fact, a large photograph and represents a view which is probably familiar to many readers of this monthly article. It is actually a photograph taken in the Lake District near Ullswater. The apparatus which Mr. Harris used for this scene is really quite simple and yet it is all that is necessary. It consists of a table on which is placed a concrete block to represent the road and cliff edge. Behind this is fixed a large photograph of a relevant landscape—Mr. Harris used a 12 inch × 15 inch print—and a powerful lamp is required for lighting purposes. As you can see the results given are well worthwhile.

Another example of what can be achieved by the use of Dinky Toys models is shown in the picture over the page of the No. 449 Chevrolet El Camino Pick-Up Truck, which is seen loading up with crates and barrels from a railway siding. While this may not be a strictly orthodox view it is certainly the sort of thing that lots of youngsters revel in when they have a chance of making up a layout of this nature. The barrels, etc. used in the picture are available as Dinky Toys models, being made in our French factory at Bobigny (Seine). They are, of course, on sale at our Dealers in this country.

Finally, I am pleased to be able to tell you that I now have the results of the recognition test which we featured in these

This very realistic picture with a true lakeland background comes from Mr. Bertrand Harris of Westerhope, Newcastle-on-Tyne. How Mr. Marris took this picture is described in this month's Notes.

Loading up by a goods siding is the Dinky Toys Chevrolet El Camino Pick-Up Truck.

pages in September. There was a very large entry for this, and I would like to thank all the competitors who took part. Here are the correct answers to the questions: 1. No. 173 Nash Rambler; 2. No. 181 Volkswagen; 3. No. 191 Dodge Royal Sedan; 4. No. 168 Singer Gazelle; 5. No. 254 Austin Taxi and 6. No. 230 Talbot-Lago Racing Car.

In judging this, I took into account not only the fact that catalogue names and numbers had to be correct, but also the spelling of the models. The list of winners is:

Malcolm Brett of Ilford, Essex; D. W. Stewart of Hendon, London N.W.9; Richard Gollard of Leeds 17; Peter K. Casson of Burton, Carnforth, Lancs.;

(*Continued on page 430*)

THEY WERE DIFFERENT THEN

Concluding The Series
By Patric Baker

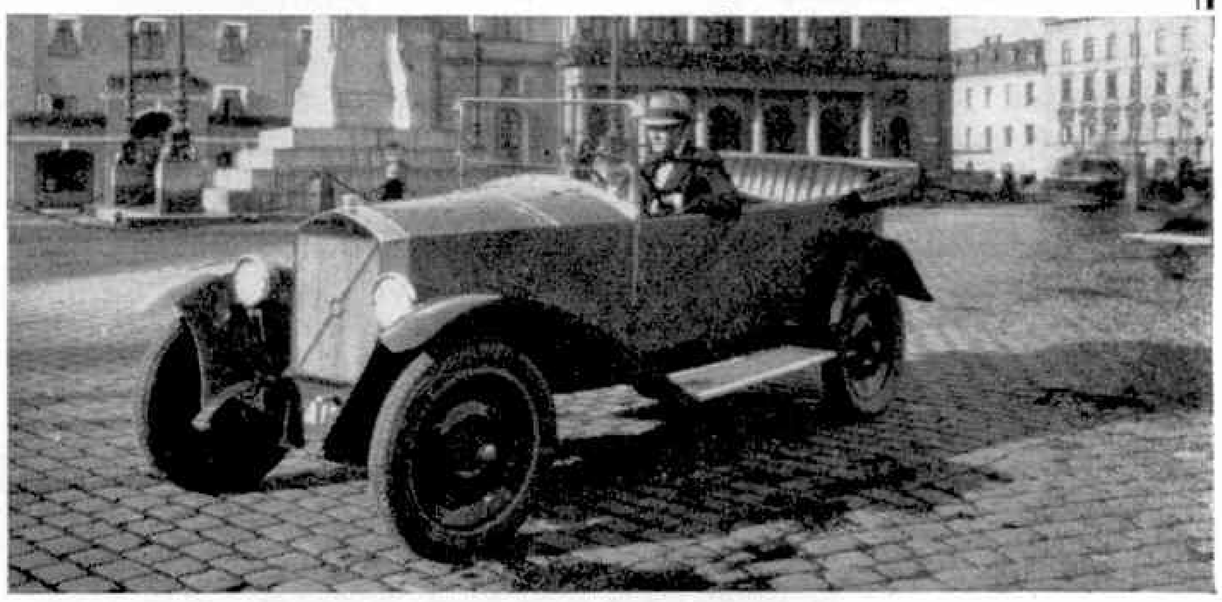
No. 10—The Volvo 122S

AS one might expect from a country world-famous for its engineering skill, Sweden has a thriving motor industry based on three big names. They are Scania-Vabis, heavy vehicle builders, the Swedish Aircraft Company, makers of the small but potent SAAB–95, and Volvo, whose products range from tractors and trucks to the rally-winning 122S passenger car, known as the "Amazon" in its native land.

AB Volvo (the word means "I roll" in Latin) started making motor cars in 1927 when ten experimental models were produced in a Gothenburg workshop at the personal expense of the two founders of the company, Assar Gabrielsson and Gustaf Larson, who might be termed the Nuffield and the Issigonis of Sweden. These proved so successful that funds were soon found to build 100 more.

The first Volvo—nicknamed "Jacob"—was an open four-seater with a 4-cylinder, 28 b.h.p. side-valve engine. It had a wooden body covered with leatherette and its lines were clean and functional. Ideally suited for the rough Swedish roads, this rugged tourer impressed everyone with its first-rate workmanship, and 300 cars were sold in the first twelve months.

By 1930, other models had been introduced and the annual output rose to 2,000 units. Ten years later the figure stood at 9,000 vehicles a year, more than half of which were trucks and buses. It had not taken long to prove to Scandinavia and the outside world that "built the Volvo way" was no mere advertising slogan.



After the war, Volvo produced the well-known PV 444 model, a medium-size 1½-litre car, powered by a four-cylinder o.h.v. engine of 1,414 c.c. Possessed of the usual Volvo virtues of great strength and long life, this lively vehicle was capable of 78 m.p.h. in standard trim and over 90 m.p.h. as a competition car. By 1957, more than 150,000 PV 444's had been produced for the home market and 85 countries abroad. While serving as a newspaper correspondent in Stockholm, I owned a 1949 model 444 which had covered more than 70,000 miles on its original engine. When I sold it after a year of brutal treatment, another 21,000 miles had been notched without overhaul.

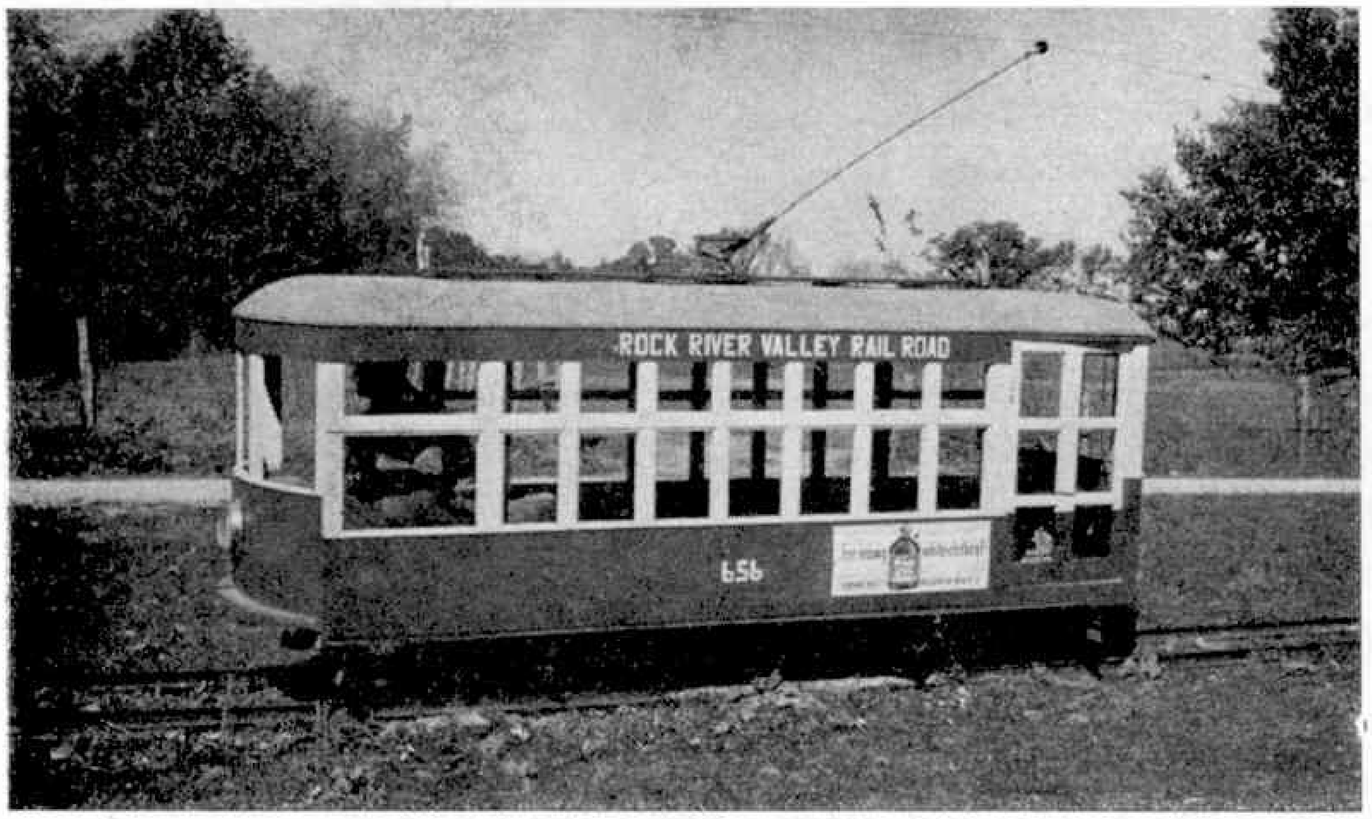
An interesting sideline on the faith which the Volvo Company has in its products, and also in its repair facilities, is shown by the special accident coverage scheme for home customers. In the event of a crash, no charge is made for repairing damage in excess of third-party insurance coverage, provided the owner pays the first £15–20.

Latest champion from the Volvo stable is the 122S B18 model, a more sophisticated four-door saloon of decidedly sporting character. The car is powered by a four-cylinder, push-rod operated o.h.v. engine of 1,780 c.c. developing 90 b.h.p. at 5,000 r.p.m. Front suspension is by coil springs with anti-roll bar; at the rear there are torque arms with coil springs.

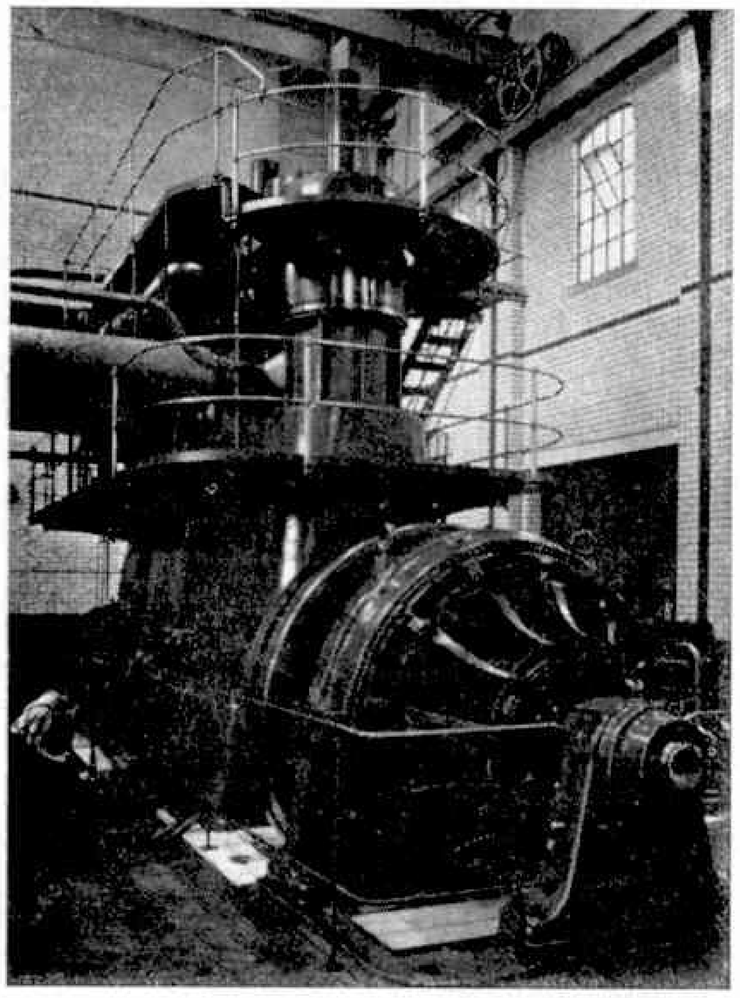
For a 1.7 litre car, the B18 has an outstanding performance. Maximum speed is in the region of 95–100 m.p.h. with an 0–80 m.p.h. acceleration figure of under 30 seconds. The roadholding of this dual-personality model, bred on unmetalled Swedish lanes, is excellent and examples of the earlier 122S version—which has a 1,580 c.c. engine developing 85 b.h.p.—have proved themselves in rallies and competitions all over the world.

A matter of considerable contrast are these pictures of then and now. Above: one of the first ten original prototype Volvos with body designed by a well-known Swedish painter. Below: the Volvo 122S, latest addition to a line of world-famous cars.

OF GENERAL INTEREST



All tramcar lovers will be interested in this picture of a 2-ft. gauge tramway which is operating on a farm in the U.S.A. The car is powered by an old printing press motor working from the overhead supply line on a voltage of 110 D.C. Passengers and driver sit on the floor. Photograph by C. E. Keevil.



This 2,000 i.h.p., three-cylinder compound engine, running at 220 r.p.m., has been in continuous operation at the Peter Dixon & Son Ltd. Paper Mill, Grimsby, since 1912. With cylinder diameters of 28 in. and 32 in. and with a stroke of 24 in. it was built by the Manchester firm of Browett, Lindley Ltd., and is said to be the biggest engine ever built by that company. When this picture was taken it was still being used, but was due to be replaced by a steam turbine as part of the company's expansion programme.

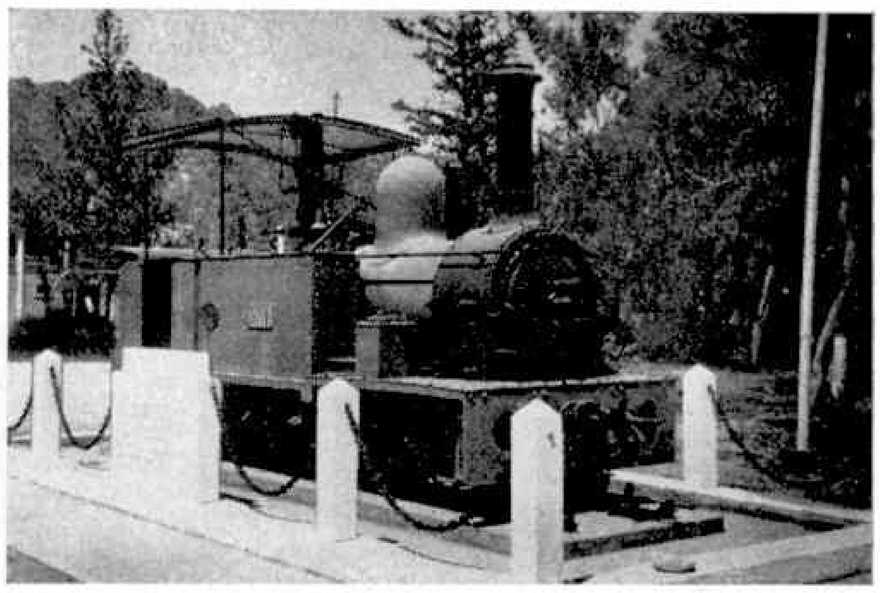
Shown (right) at the foot of the page is Cyprus Railway's Locomotive No. 1, built by the Hunslet Engine Company of Leeds. This historic locomotive arrived in Cyprus in 1904 for the opening of the Cyprus Railway in the early months of that year. The railway ran between the island's chief port of Famagusta and the capital city of Nicosia. Later, the line was extended to Morphou, a small agricultural town in the north-west of Cyprus.

The railway consisted of 41 route miles of track and in its prime operated some 22 locomotives as well as numerous types of freight cars. Several passenger cars were also included in the rolling stock. Most passenger trains, however, were operated on a mixed traffic basis.

The Cyprus Railway's track, laid to a gauge of 3 ft. 10 in., provided for single line working throughout, although passing loops were arranged at stations. During the war years the trains carried many thousands of tons of supplies to and from Famagusta and aided the Allied war effort in no small way. The railway was closed in 1951, and now only Locomotive No. 1 remains.

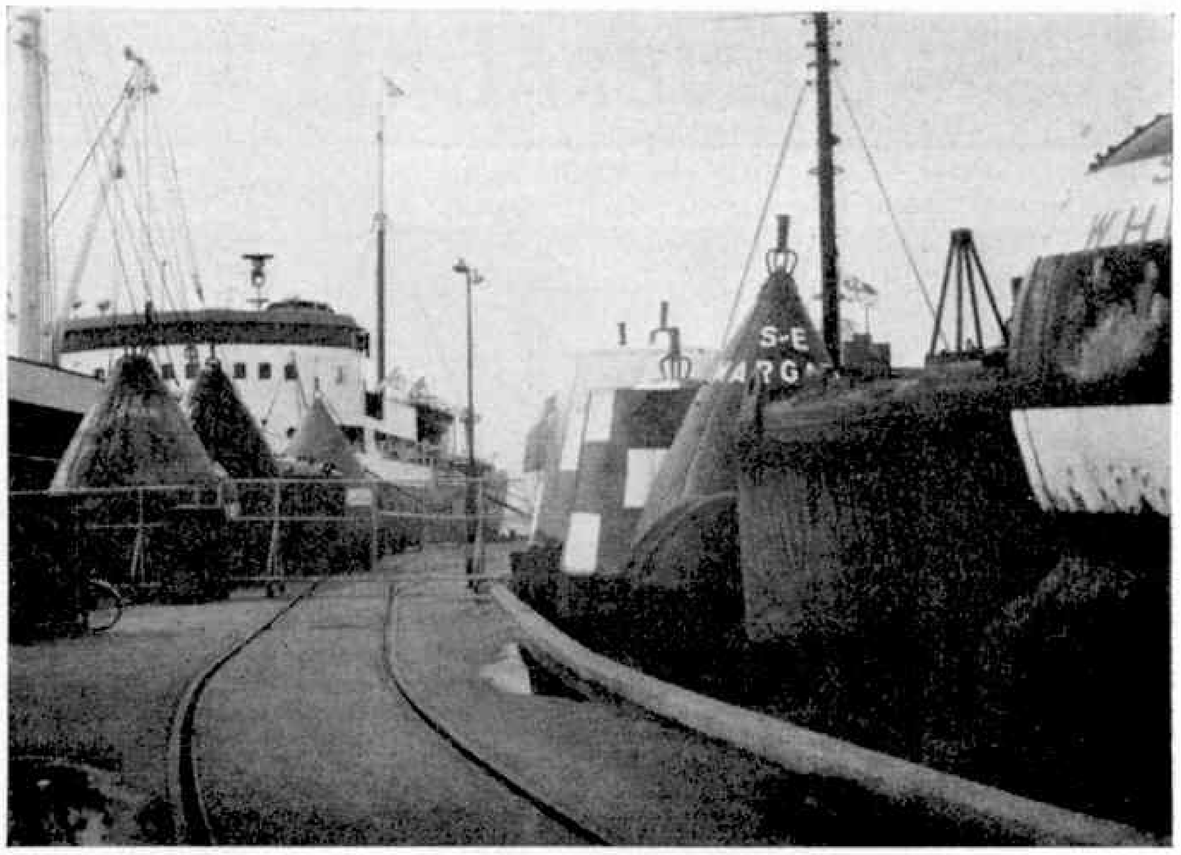
March Of The Dwarfs

In Germany, writes Hans F. Kutschbach of Hannover-Westerfeld, West Germany, gaily-coloured dwarfs made of pottery are found in many gardens. Here are some of these little men "on the march"—and an impressive sight they look formed up in ranks outside the plant at Lauterbach, Hesse, where they are made.



BRITAIN'S LIGHTHOUSE TENDERS

• At this time of the year, when parties are being planned and festive arrangements made, how many people spare a thought for the men who, in towering lighthouses and rolling lightship, keep our sea lanes safe? A special service attends to their needs, ferrying supplies and other essentials from the ship to their sea-girt outposts. This is the story of those grand little ships . . . .



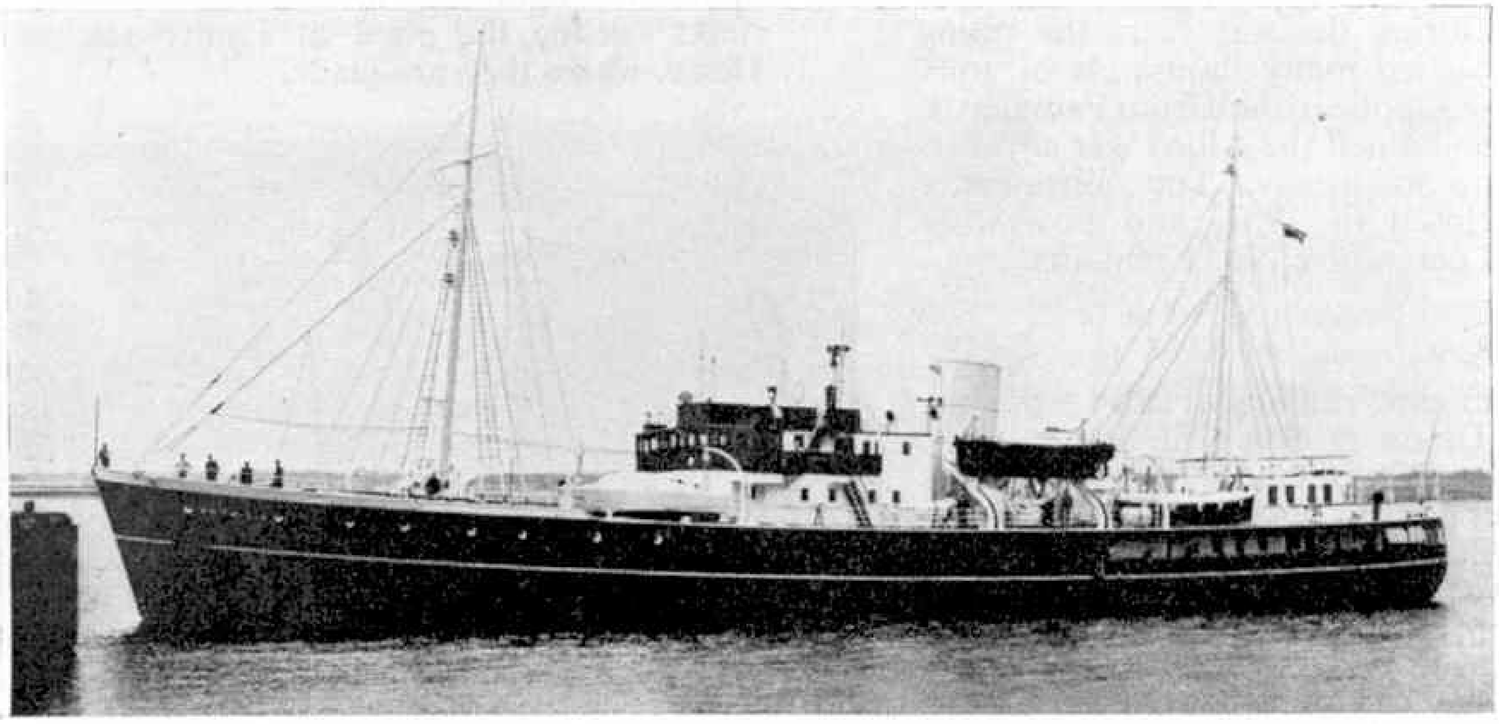
The Trinity House Pier at Harwich. A tender lies alongside ready to take on buoys.

DAY in, day out throughout the year, in fair weather and foul, nine specially constructed ships provide a service which does not often figure in the public eye. They are the lighthouse tenders which service Britain's Lighthouses and Lightships, towing new and repaired lightships to their chosen positions, destroying submerged wrecks and attending to buoys.

The tenders vary in length from 100 ft. to 250 ft. and their draught varies from 10 to 15 ft. These small handy boats which possess great manœuvrability operate in dangerous restricted areas which the bigger ships leave severely alone.

The complement of these lighthouse tenders themselves consists of a captain, two navigating executive officers with two or three engineers. In addition there are a boatswain, carpenter, coxswains, deck and engineroom ratings, radio officers, cooks, stewards and boys. Special quarters are provided on board for lighthouse keepers, lightship men, and, sometimes mechanics who are being taken to and from a particular lighthouse or lightship.

The M.V. "Patricia" pictured below is not strictly a tender, for she is the flag ship of Trinity House. Built in 1938 she is 231 ft. long overall with a beam of 35 ft. 6 in. and a gross tonnage of 1,116. She is a twin-screw vessel with diesel-electric propulsion. In this ship the Elder Brethren of Trinity House carry out their annual inspection of all navigational aids around the coast.



By
ANDREW CARNEGIE

Rock lighthouses, which are several miles from the shore, and lie in rough, wave-crested seas, where the spray is sometimes flung high above the lighthouses themselves, are provided by the crews of the tenders with everything required for their effective working.

Anchoring to the rocky base, in a choppy sea, with the wind howling and the boat rocking, is certainly no picnic, and requires much courage, endurance and stamina. Mechanical aptitude above the average is also called for.

Sometimes weeks elapse before the necessary personnel and stores can be landed safely from a lighthouse tender. Here is a description by an experienced officer:

"The actual landing conditions differ according to the various lighthouse situations. In some cases, men and stores are hove up out of the boat by means of a rope which is rove through a block or tackle at the top of the lighthouse, and which then runs down to a winch on the landing or in a winch-room in the tower. This means a journey (for men and stores) rather like the flying trapeze act, especially in bad weather when one may be under water one moment and then jerked skywards the next.

"There is another method of transport, by mast and derrick, from a lower level which is a landing platform or jetty just above high water mark. This means a journey up in a bowline, and then a circular tour until the derrick swings you over the landing before you are gradually deposited on the platform itself.

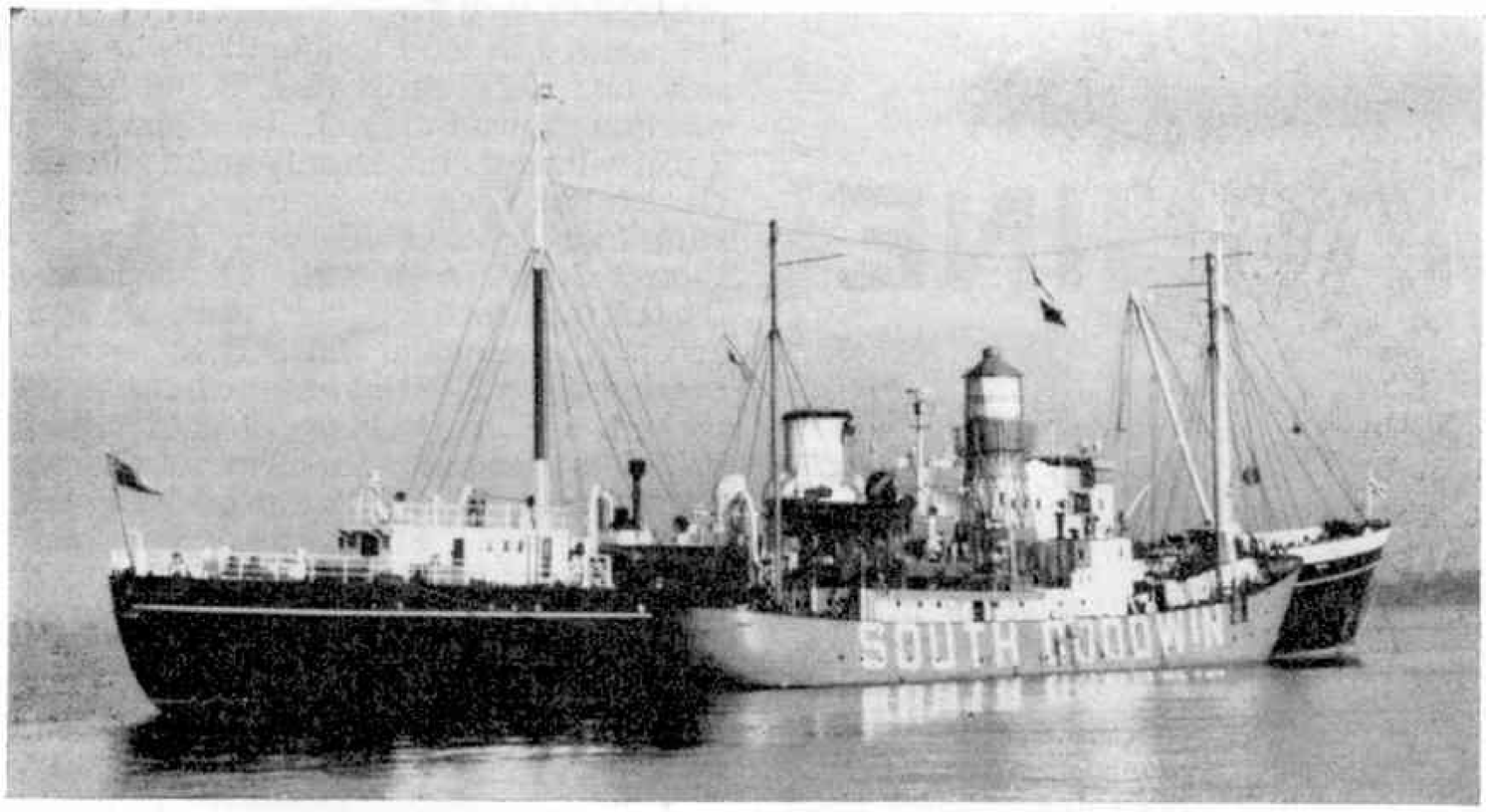
* * * *

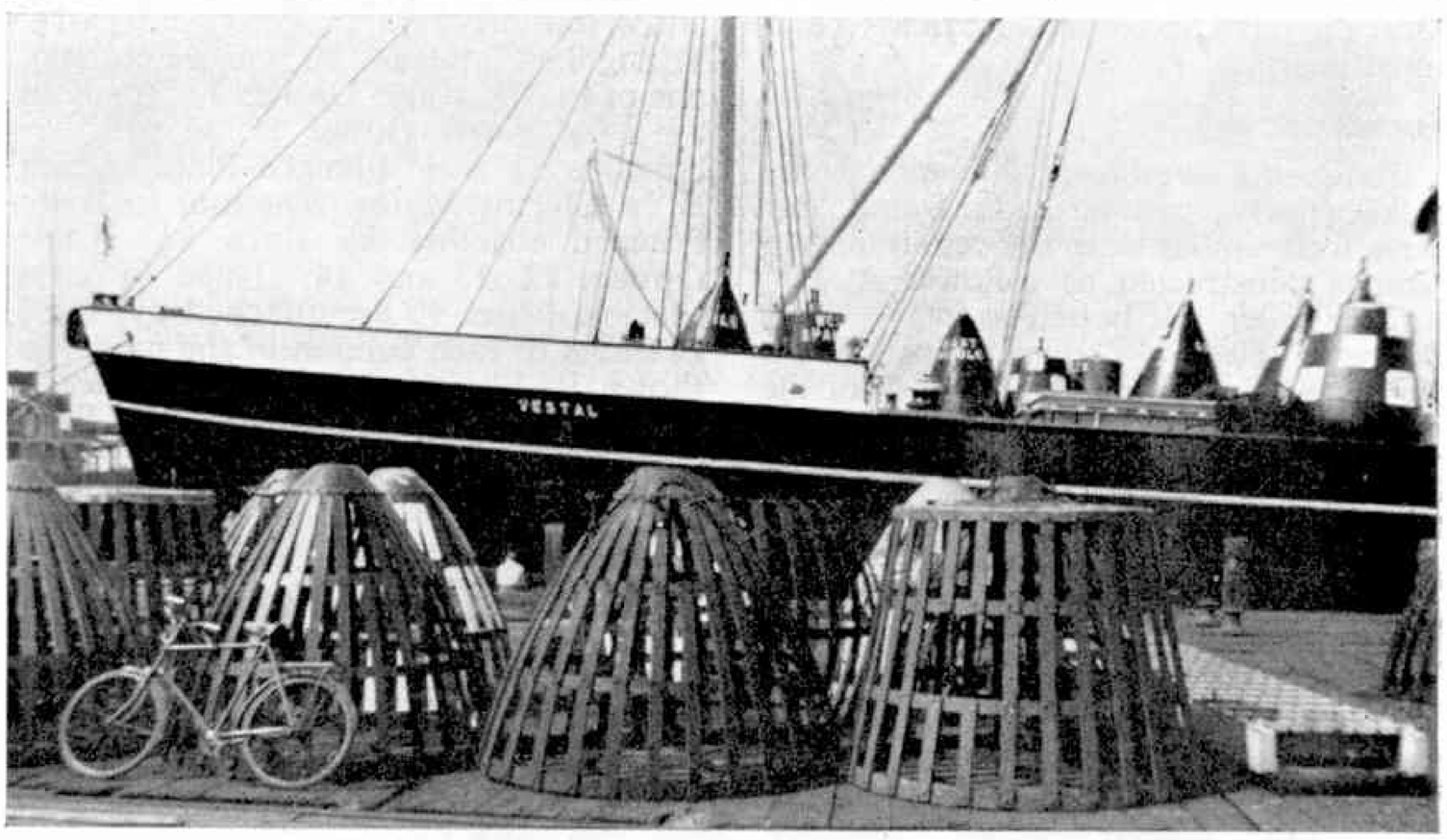
"Throughout such operations a very careful watch has to be kept for sudden, rising seas which may run over the landing platform and take men and stores overboard."

This officer in fact, can recall four men being washed into the sea from rock lighthouses. Only two, alas, were rescued.

Lighthouse tenders supply fresh water in nine-gallon casks, oil in five-gallon drums, and coal in hundredweight bags, cans of paint, clothing, provisions and stationery.

These ubiquitous small ships also deliver crated lamp cylinders, incandescent mantles in cartons, cleaning material,





Above: Replacement after tragedy. A few years ago the South Goodwin Light was lost after a storm. Here the tender "Ready" sets out with a newly-painted replacement. (Below): The tender "Vestal" with buoys on board. This picture and the other photographs illustrating this article appear by courtesy of Mr. Holmes L. Hall of Dovercourt, Essex.

machinery, ropes, granite blocks (weighing up to two tons) for fabric repairs, and radio equipment. Other essential items that are "handed in" include mail and library books.

Removing a sick officer from a lighthouse, especially during a storm, can be a dangerous undertaking. First of all the officer is "lashed" to a stretcher and taken down the difficult, narrow, corkscrew stairs of the tower to the entrance door below. He is then lowered by rope to the landing platform and, from that point, is hoisted by derrick and swung clear of the rocks before being deposited in a small boat which is tossing about below. This craft is kept clear of the rocks or landing platform by the use of an anchor and line, or by means of a line to a buoy over the stern. This arrangement means that the sick man must be pulled into the craft by a steadying line which is often at the awkward angle of 45 degrees.

* * * *

The crew of the tiny boat subsequently "catch" the patient and guide him aboard as gently as possible.

The ailing man is well wrapped up as a protection against the bitter cold and spray, and the boat then sails in the direction of the tender, which will be some distance away. When close to the tender the small boat and its occupants are hoisted in the davit, with the minimum of jolting, on to the tender itself.

From the davit heads the patient is taken to the Officers' Mess which becomes a temporary hospital. Then, without delay, the tender heads for the nearest port and radios for a hospital ambulance to await her landing.

Requests from rock lighthouses and lightships for urgent medical aid are made by radio telephone.

In servicing lightships, tenders come fairly close up to the vessel and ensure fastness astern by a cable-connected hawser. She then pumps oil and water from her storage tanks into the tanks of the other vessel.

Food, fuel, provisions and anything else of a solid character are conveyed to the lightship by the tender's small boat. And, of course, the duty men travel to the lightship in the same way.

Another vital function of lighthouse tenders is the towing of new and repaired lightships from the mainland works to their appointed stations. Conversely, there is the removal of lightships for repairs and—occasionally—replacement. A rope or wire hawser attaches the tender to the lightship and progress is inevitably slow as the latter lacks propulsion. In rough seas, of course, this operation is decidedly more difficult and very occasionally under such conditions a lightship has lost her rudder.

A further essential service of tenders is the location and destruction of wrecks, many of which are submerged. Two tenders, with an underwater sweep-wire linked to them, cover the areas in which it is suspected there may be wrecks. If sunken vessels are discovered, specially-marked buoys are left to float above them. Sometimes, too, tenders are able to locate wrecks by means of echo-sounding equipment.

The destruction of a wreck is brought about either by divers placing explosives inside the vessel or by boat crews "sweeping" explosives inside it. Having laid the charge, the tenders then withdraw to a safe distance and fire it electrically.

Where water is shallow, the tenders must be doubly sure to be far enough away during the explosion, for pieces of wreckage could be blasted into the air and could be very dangerous.

* * * *

Before a wreck is destroyed, the ship's former owners are consulted as to the cargo she carried. Obviously, if a wreck contains, say, gelignite the tenders have to exercise stringent precautions both before and during the destruction of the hulk. Great care must be also shown when occasional ex-enemy mines have to be dealt with.

A final vital task of tenders is attention to the many buoys which mark channels, rocks, wrecks and other lurking dangers. Many buoys exhibit a light (usually white or coloured), some have a bell—most useful, of course, in a fog—while others have a deep-toned whistle.

Very heavy buoys, weighing twelve tons and measuring over ten yards in length, have a light, a bell *and* a whistle. Heavy chains and five-ton "sinkers" keep these huge buoys stationary.

* * * *

One of the derricks of each tender (which has carrying power up to 20 tons) is used to drop buoys wherever they are required. This is an intricate task only undertaken during fair and reasonably calm weather.

Tender crews keep meticulous observation of buoys to ensure that they are functioning properly and, when necessary, carry out repairs. They call these less romantic illuminants "Milestones of the sea".

A FINE NEW MECCANO MODEL

BORING MACHINE

THE Boring Machine that forms the subject of the fine model seen in Fig. 1 on this page is one of the most useful among the large variety of machine tools at the disposal of the modern engineer. In general design it is based upon a real machine and every attempt has been made to reproduce not only the movements of the prototype but also its general appearance and proportions.

The model is driven by an E15R Electric Motor and it will form an attractive subject for those with a good assortment of Meccano parts and experience in Meccano construction.

Framework

Commence building the model by making the two columns of the frame. For these four similar sides are required, and each is constructed as follows: A $12\frac{1}{2}''$ Angle Girder 1 is bolted to a $5\frac{1}{2}''$ Angle Girder 2. Two $5\frac{1}{2}''$ Curved Strips 3 and a $5\frac{1}{2}''$ Strip 4 are secured to the ends of the Angle Girders 1 and 2. The frame thus formed is filled in with a $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flat Plate 5, two $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates 6, a $4\frac{1}{2}'' \times 2\frac{1}{2}''$ and a $3\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate 7 and 8, and one $3\frac{1}{2}'' \times 2\frac{1}{2}''$ and one $3\frac{1}{2}'' \times 1\frac{1}{2}''$ Triangular Plate 9 and 10. On one column, one of the $5\frac{1}{2}''$ Angle Girders 2 is replaced by a $9\frac{1}{2}''$ Angle Girder 11, to which is bolted a $3\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate and an E15R Electric Motor. The four sides are fastened together by three $9\frac{1}{2}''$ Angle Girders 12, 13 and 14. Three $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates 15 are attached by Angle Brackets to each column of the model as shown in Fig. 2. A $9\frac{1}{2}''$ Flat Girder is bolted to the Angle Girder 14. Four Stepped Curved Strips arranged in a circle are secured to the Flexible Plates on each side, and a $2\frac{1}{2}''$ Strip 16 is bolted in the position shown in Fig. 3. Looking at Fig. 2 you will see a Hub Disc 17 and a Circular Girder 18. These are connected together with four $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates and three 2" Strips. A $1\frac{1}{2}''$ Strip is bolted across the centre of the Hub Disc, and a $5\frac{1}{2}''$ Strip across the Circular Girder to provide bearings for a $2\frac{1}{2}''$ Rod on which the worktable, a 6" Circular Plate 19 with a Bush Wheel, is mounted. This Rod also carries a $\frac{3}{4}''$ Contrate Wheel. A 4" Rod 20, Fig. 2, mounted in a $1\frac{1}{2}''$ Strip and a $1'' \times 1''$ Angle Bracket, has two $\frac{1}{2}''$ Pinions secured to it, one engaging with the $\frac{3}{4}''$ Contrate Wheel on the spindle of the worktable and the other with the Worm Wheel 21. The Hub Disc is attached to the $9\frac{1}{2}''$ Angle Girder 12 by two Fishplates.

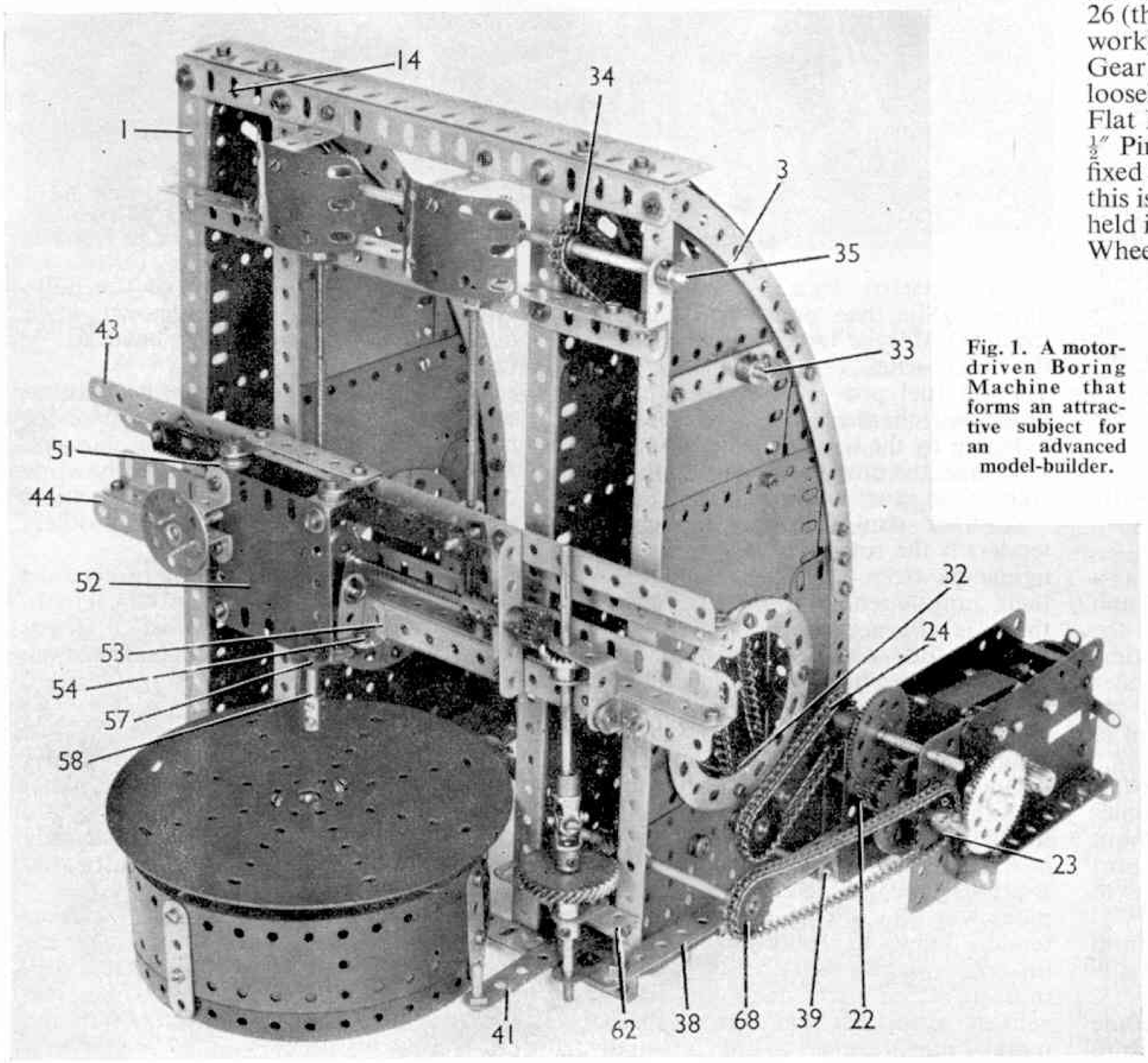


Fig. 1. A motor-driven Boring Machine that forms an attractive subject for an advanced model-builder.

Motor Drive

The Motor side-plates are extended with $3'' \times 1\frac{1}{2}''$ Flat Plates. A $\frac{7}{16}''$ Pinion on its shaft drives a 60-tooth Gear Wheel on a $2\frac{1}{2}''$ Rod, on the other end of which is a $\frac{1}{2}''$ Pinion. This Pinion engages with a 57-tooth Gear Wheel on a $2\frac{1}{2}''$ Rod that carries a $\frac{1}{2}''$ Pinion 22 and a 1" Sprocket Wheel 23 (Fig. 1). A $\frac{3}{4}''$ Sprocket Wheel 24 is fixed on a $2\frac{1}{2}''$ Rod and a 57-tooth Gear Wheel also on this Rod is arranged to engage with the Pinion 22. On the $4\frac{1}{2}''$ Rod 25 is secured a 1" Sprocket Wheel, a $\frac{1}{2}''$ Pinion 26 (this is not seen as it is inside the framework), another $\frac{1}{2}''$ Pinion 27, and a 1" Gear Wheel 28. A $\frac{1}{2}''$ Pinion 29 (Fig. 2) is loosely mounted on a $\frac{3}{4}''$ Bolt locked to the Flat Plate of the column by two nuts. A $\frac{1}{2}''$ Pinion 31 and a 1" Gear Wheel 30 are fixed in each end of a Socket Coupling and this is placed on a 4" Rod with Keyway 32 held in position by Collars. A 1" Sprocket Wheel is secured on the Rod inside the column, and is connected by Chain to a 1" Sprocket Wheel mounted on a $2\frac{1}{2}''$ Rod 33 (Fig. 1). A $\frac{3}{4}''$ Sprocket Wheel on this Rod drives a $\frac{3}{4}''$ Sprocket Wheel 34 on an 8" Rod 35, which has two $\frac{7}{8}''$ Bevel Wheels 36 (see Fig. 3) fastened to it. A $9\frac{1}{2}''$ Angle Girder 37 fitted with two $1'' \times 1''$ Angle Brackets, supports the Rod 35. A $5\frac{1}{2}''$ Strip 38 fitted with a Threaded Pin is lock-nutted to a $\frac{1}{2}'' \times \frac{1}{2}''$ Reversed Angle Bracket attached to the $9\frac{1}{2}''$ Angle Girder 11. The inner end of $5\frac{1}{2}''$ Strip 38 is attached by a Bolt to a Collar on the 4" Rod 39. Two $1\frac{1}{2}''$ Rods fastened in a Coupling 40 secured on Rod 39 engage with the groove of the Socket Coupling to form the drive reverse mechanism.

A $4\frac{1}{2}''$ Strip 41 (Fig. 1) fitted with a Threaded Pin and an End Bearing is lock-nutted to the Angle Girder 12. The lugs of the End Bearing engage with the 57-tooth Gear Wheel 42, which is placed on a 4" Rod with Keyway and is free to move to engage with the $\frac{1}{2}''$ Pinion 26 inside the column.

Both the Gear Wheel 42 and the 1″ Gear Wheel 30 have Key Bolts in their bosses.

Two 12½″ Angle Girders 43 are bolted together to form a reversed angle girder (see Fig. 1), and a similar pair of Girders 44 are joined to it by 1½″ Flat Girders 45 (Fig. 2), spaced away from the Angle Girders by two Washers on each of the ⅜″ holding Bolts. A 2½″ Angle Girder 46 (Fig. 3) is fastened to the front. Two Threaded Cranks 47 (Fig. 2) are secured to the Angle Girder 43. Two ⅞″ Bevel Wheels 49 are fastened to Screwed Rod Adaptors fixed in the ends of 6″ Screwed Rods 48, and locked in place by nuts. These Screwed Rods are threaded through the Threaded Cranks 47. Two 2½″ × 1½″ Flexible Plates are curved to form shields and are attached to the Angle Girder by 1″ × ½″ Reversed Angle Brackets.

The Tool Carriage.

Two 2½″ Angle Girders 50 are placed together with the elongated holes of one facing the round holes of the other. A Fishplate is placed between them at each end and these are attached to the lugs of a 2½″ × ½″ Double Angle Strip 51 bolted on each side of a 2½″ × 2½″ Flexible Plate 52. Three Washers are used to space the Fishplate from the lugs. A similar pair of Angle Girders 53 (Fig. 1) is secured at the bottom of the Plate 52 by Fishplates. A 1″ × ½″ Angle Bracket 54 (Fig. 1) extended by a Fishplate forms the bearing for a 4″ Rod with Keyway 55, which is secured by a Coupling to a 1″ Rod carrying a ½″ Pinion 56. A Double Bent Strip 57 supports a 2½″ Rod 58 carrying a ⅞″ Bevel Wheel that engages with the ⅞″ Bevel Wheel mounted with a Key Bolt 59 on the Rod with Keyway 55. The tool chuck is a short Coupling fixed in the lower end of Rod 58.

A 6½″ Rack Strip 60 (Fig. 3) is attached to the reversed angle girder 43 by ¾″ Bolts and three nuts, leaving a space of half-an-inch between Rack Strips and Girder. A Bush Wheel 61 is mounted on a 2″ Rod carrying a ½″ × ½″ Pinion that engages with the Rack Strip.

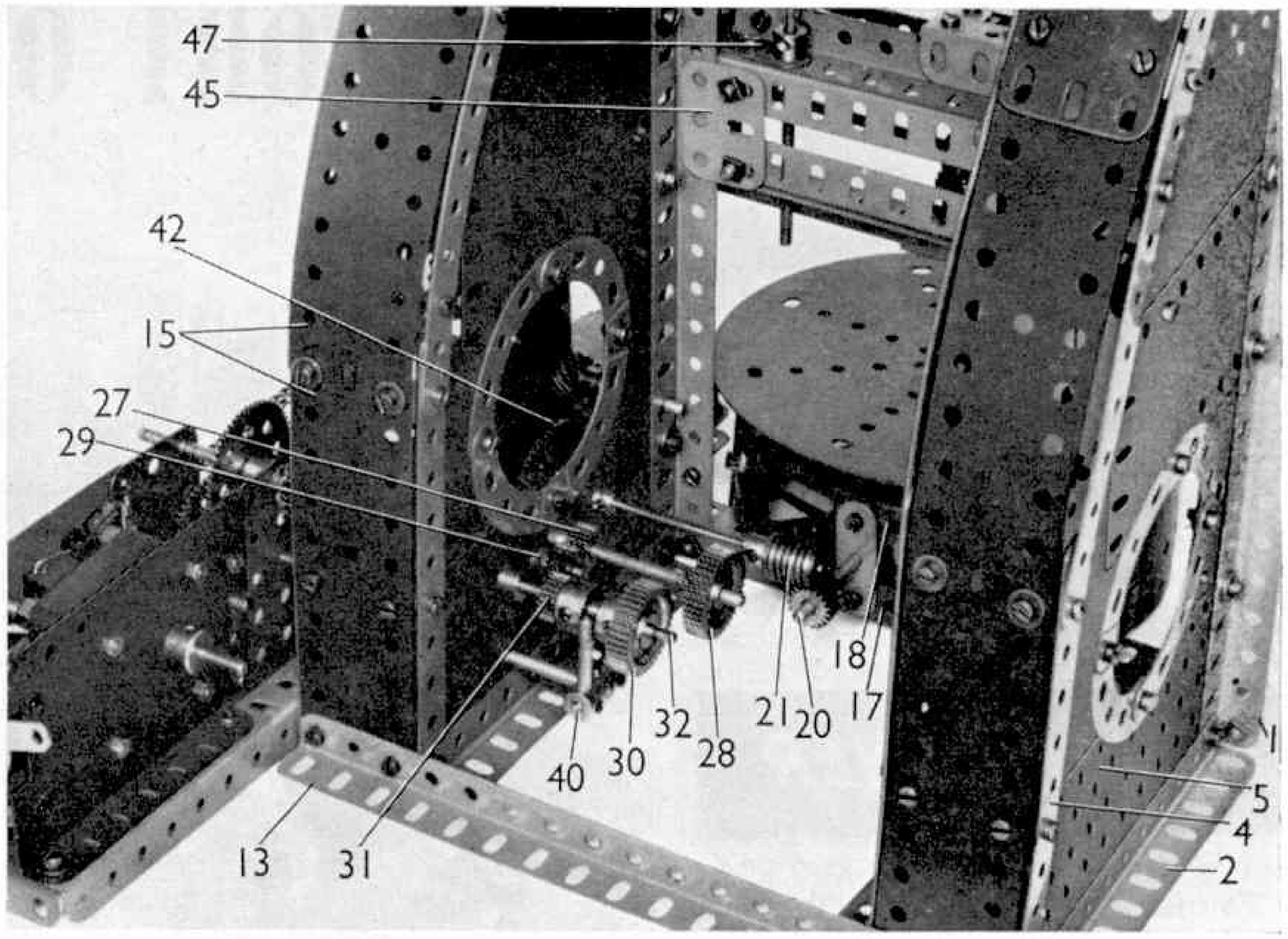


Fig. 2. A close-up of the mechanism showing the drive to the table.

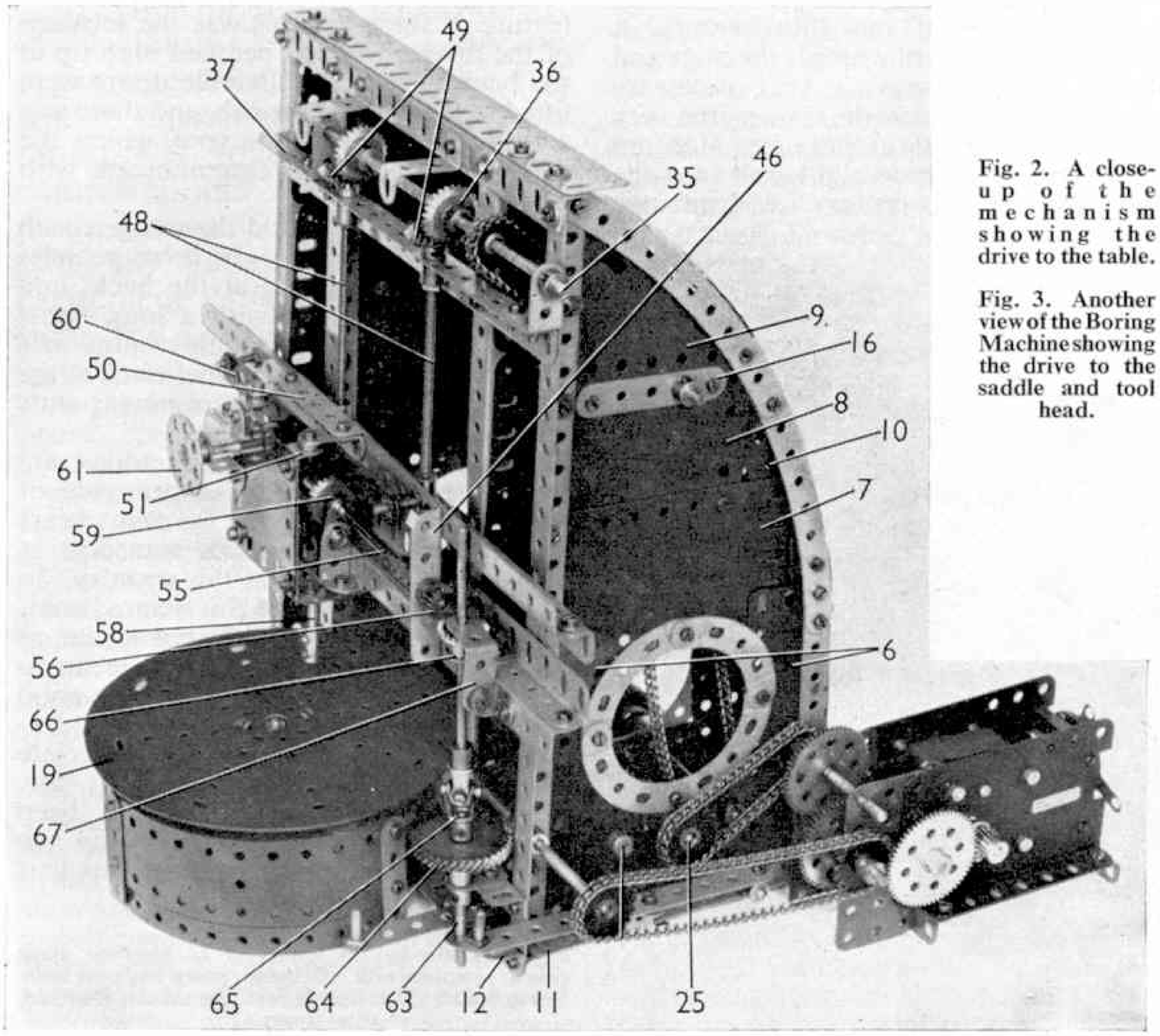


Fig. 3. Another view of the Boring Machine showing the drive to the saddle and tool head.

The Tool Drive

Two 1″ Corner Brackets are bolted to the Angle Girders 12 and 62 and a 2½″ Rod 63 that has a 1½″ Helical Gear Wheel 64 and a Universal Coupling 65 secured to it, is placed in them. A 1″ Triangular Plate 66 bolted to the Angle Girder 44, and a 1″ × 1″ Angle Bracket 67 attached to an Angle Bracket fixed on the Angle Girder, support a Rod with Keyway, which is fastened in the Universal Coupling 65 the other end of which is fixed on the 2½″ Rod 63. A ¾″ Contrate Wheel with a Key Bolt in its boss is placed on the Rod so as to engage with the ½″ Pinion 56.

The Sprocket Wheel 23 (Fig. 1) drives a 1″ Sprocket Wheel 68 on a 4″ Rod which is fitted with a ⅓″ Helical Gear Wheel that engages the Helical Gear 64.

The tool is traversed across the work-table by turning the Bush Wheel 61, and the tool saddle can be moved up or down the columns by the Motor. The work-table can be either rotated by the Motor or allowed to remain stationary, by manipulating the lever 41.

Parts required to build the Boring Machine: 6 of No. 2; 1 of No. 2a; 2 of No. 5; 3 of No. 6; 2 of No. 6a; 8 of No. 8; 5 of No. 8a; 3 of No. 9; 6 of No. 9d; 7 of No. 11; 17 of No. 12; 4 of No. 12a; 1 of No. 12b; 1 of No. 13a; 1 of No. 15a; 3 of No. 15b; 7 of No. 16a; 1 of No. 17; 2 of No. 18a; 1 of No. 18b; 2 of No. 24; 9 of No. 26; 1 of No. 26a; 1 of No. 26c; 3 of No. 27a; 1 of No. 27d; 2 of No. 29; 6 of No. 30; 2 of No. 31; 1 of No. 32; 193 of No. 37a; 175 of No. 37b; 82 of No. 38; 2 of No. 45; 2 of No. 48a; 1 of No. 53; 15 of

(*Continued on page 467*)

IN SEARCH OF NEW MODELS

TRANSPORT OF THE PAST

MANY Meccano enthusiasts have long since completed all the models illustrated in the standard Instruction Books and are eagerly looking for new subjects. Inspiration for a wide range of models can be found in any of the main branches of Engineering, and transport in particular provides the model-builder with a wealth of good ideas for Meccano models.

BY SPANNER

To many model-designers the word "transport" conjures up visions of flashy modern sports cars, huge liners, speedy aeroplanes and streamlined trains. It is very easy to forget that all our present-day forms of transport had their origin in creations of much more crude and simple type which, however, served our ancestors and the requirements of their generation very ably indeed—I am thinking particularly of road transport. A moment's thought will bring to mind quite a number of these fascinating transport "ghosts"—the old stage coach, the wealthy squire's brougham, the Hansom cab, the veteran motor cars and the now gradually disappearing tramcars.

Even in the field of the veteran car alone there are dozens of fascinating subjects for a really keen model-builder! To give some idea of the scope available for old-time transport models, I am illustrating a few examples which, I think, model-builders will find interesting.

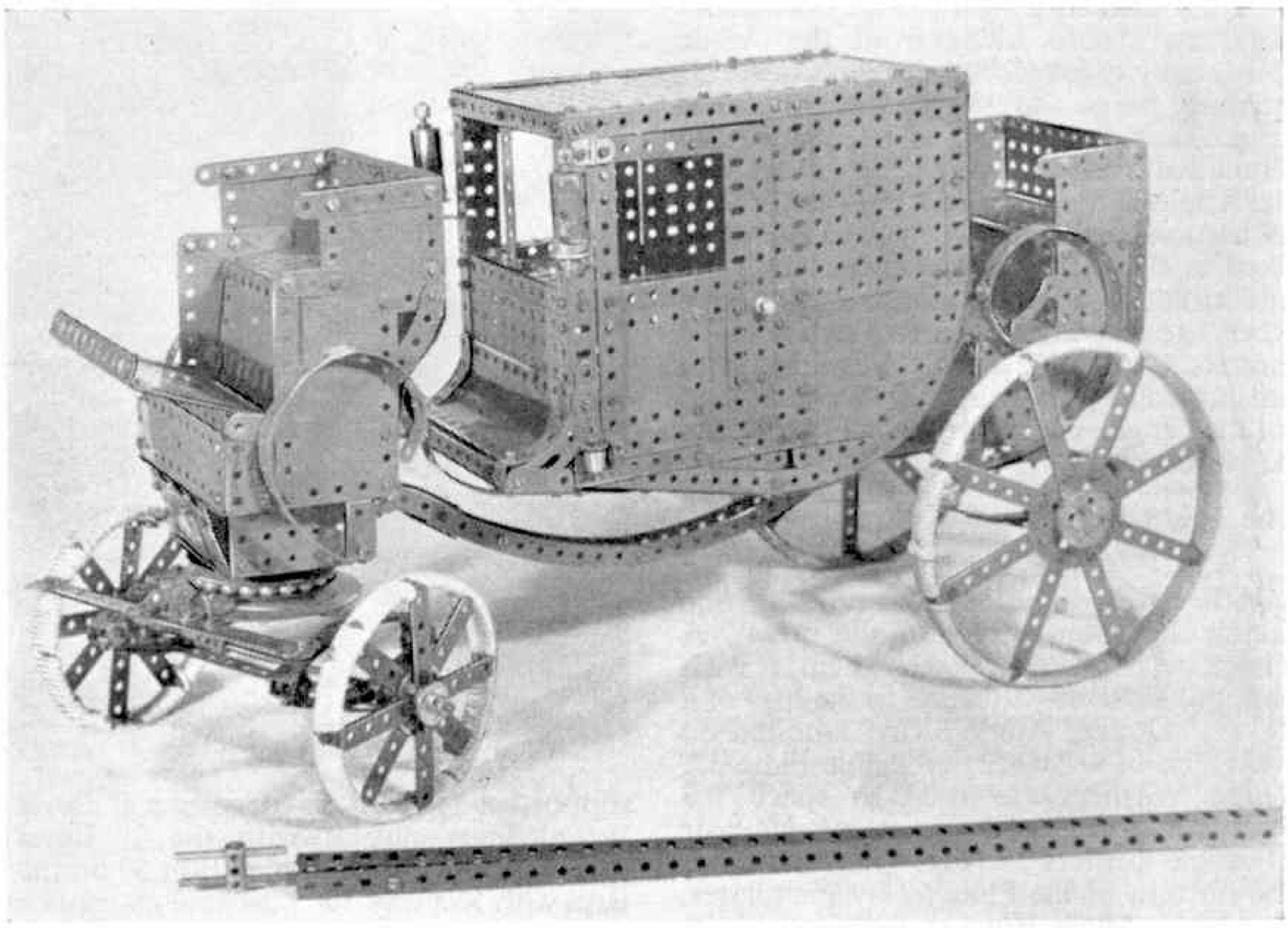


Fig. 1. Long before the advent of the motor car, handsome horse drawn private coaches of the type shown here were to be seen on our roads. They were mostly owned by noblemen or other wealthy people, and their design varied considerably. The model shown was built by G. Merlane, Woolaton Park, Nottingham.

Fig. 1 shows a fine example of a nobleman's carriage of the 18th century, a prominent feature of which is the huge and rather crude springs—a very necessary part of the equipment in view of the very poor roads available at that time. Hansom cabs were a common sight well into the early years of this century. A distinctive feature of these vehicles was the location of the driver, who sat perched high up at the back of the cab. Double doors were fitted to the front of the cab, and there was a little trap-door in the roof which the cabby could open to communicate with his "fare".

One example of an old-time stage coach is illustrated in Fig. 2. In these vehicles the guard was perched at the back, and was usually provided with a long "post horn" on which he blew loudly to announce the arrival or departure of the coach at the various inns and other stopping points along his route.

Many transport enthusiasts today are mourning the gradual disappearance of the electric tramcar, which for many years provided the public service transport in many towns and cities in this country. In some parts of the world the electric tramcar is still "going strong", but so far as this country is concerned its day seems to be nearly over. Fig. 3 shows three good models of tramcars. Readers who are tramcar enthusiasts will be quick to appreciate that the builder of these fine models, Mr. Stewart Reid, of Aberdeen, has been extremely successful in reproducing the lines and characteristics of the trams that once operated in that granite city.

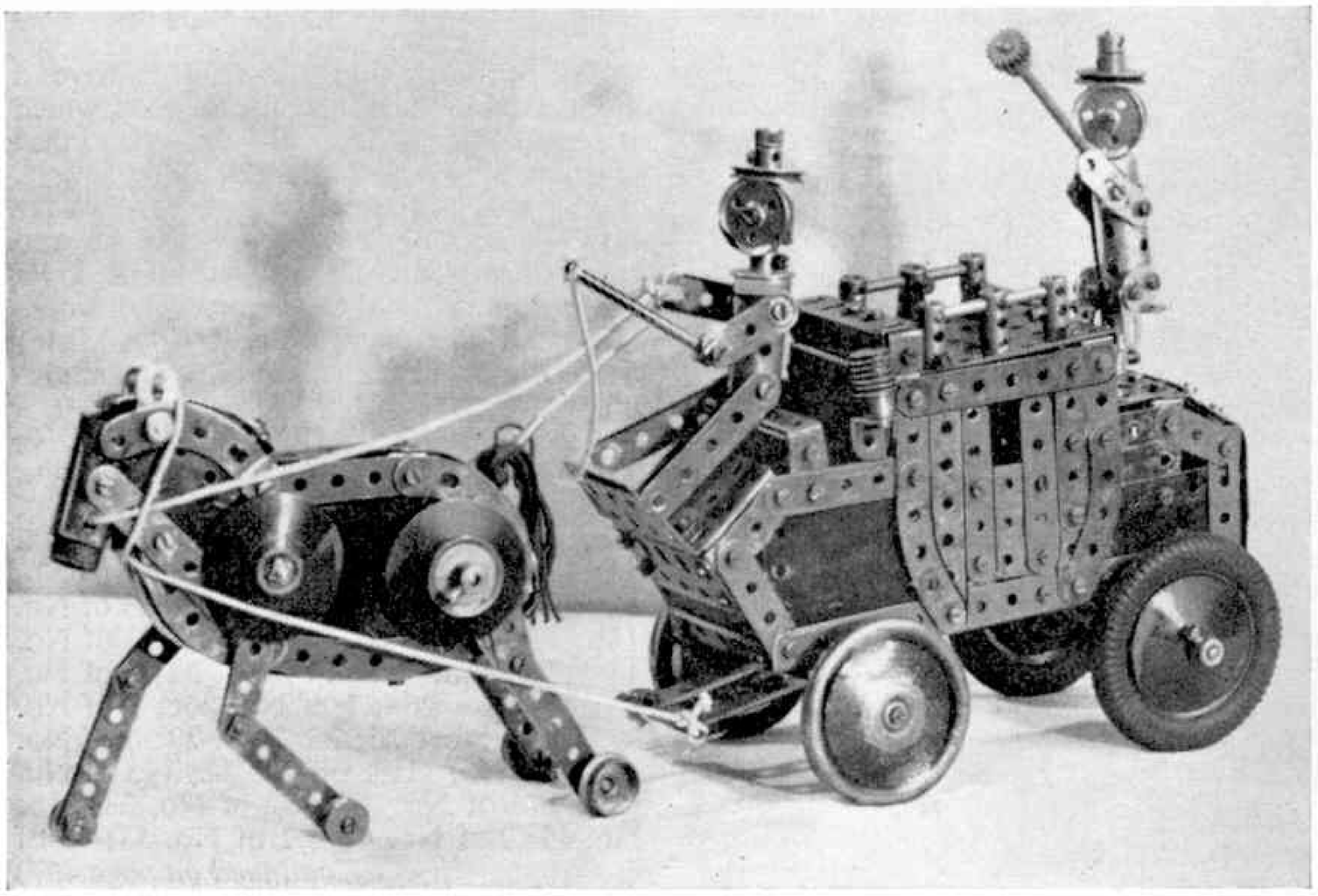


Fig. 2. Tally-ho! A model of an old-time stage coach, complete with coachman, guard and post horn. It was built by Mr. Eric Howell, Dranfield, Sheffield, some years ago.

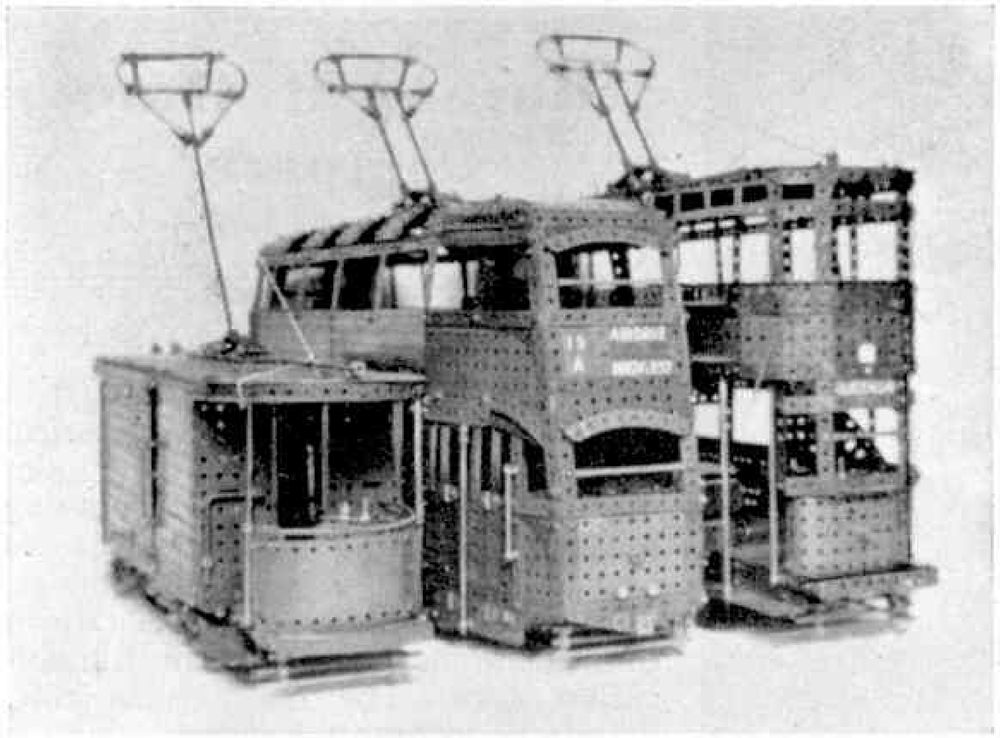


Fig. 3. (Left) Three different types of electric tramcars excellently modelled in Meccano by Mr. Stewart Reid, Aberdeen

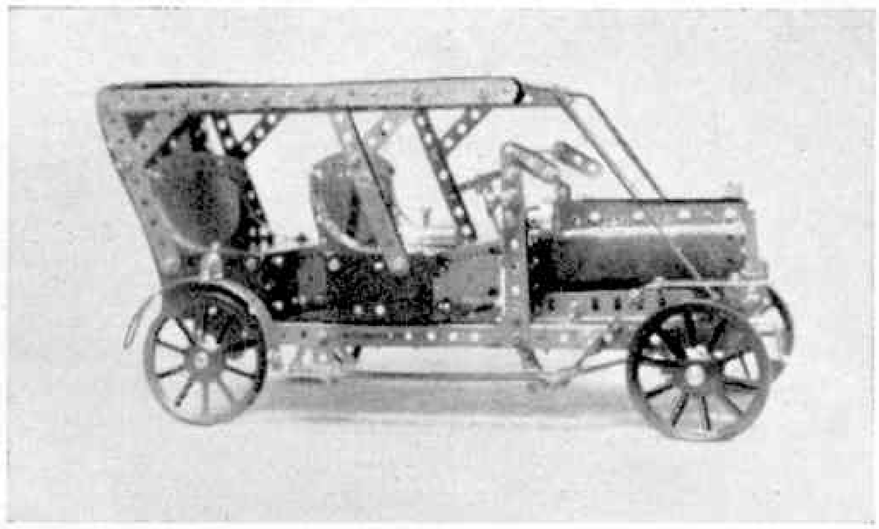


Fig. 4. One of the many fascinating predecessors of the modern streamlined motor car. These intriguing veterans make most attractive subjects for "free lance" models.

Finally, Fig. 4 is a very good model of an early motor car of the vintage variety. Models such as this are great fun to build, and the job of accurately reproducing their many fascinating features will provide the best of model-builders with food for thought.

Fortunately pictures and details of nearly all forms of transport of the past are readily obtainable from books and magazines, and a visit to the local library should be quite fruitful in providing prospective model-builders with material on which to base their work.

I know from experience what really good fun is to be obtained from this type of model-building, and I do hope therefore that some of my readers will have a go at it. Don't forget to let me know how you get on, and please send me a photograph of any models you build. Good hunting and good luck!

Winter Model-Building Contest No. 1

A FINAL REMINDER

THE first of the General Model-Building Competitions we are organising during the autumn and winter closes at the end of this month. If you have not already completed and sent in your entry, do so without further delay, before you are caught up in all the excitement of Christmas preparations and discover one day that you have left it too late.

In these contests we are offering cash prizes considerably bigger than those awarded in recent competitions. You will find the prizes listed in the panel at the foot of column 3, and you will see that, by comparison with the autumn competition of last year, the first prize in Section A has been increased from four guineas to five guineas and the first prize in Section B (for senior builders) from four guineas to seven guineas, with proportionate increases in the remaining prizes.

HOW TO ENTER

If you wish to enter this Competition all you have to do is to think of a new model and then set to work to construct it, as neatly and realistically as possible, from standard Meccano parts. Models that are merely copies of models shown in Meccano Instruction Books or other Meccano publications will not, of course, be eligible.

When you have completed your model the next thing is to obtain either a good, clear photograph, or, if this is not possible, make a good sketch of it, and send this to us. *The actual model must not be sent in any circumstances*. However, if you cannot obtain a photograph and you are not much good at sketching, you can ask one of your pals to make the sketch for you. The model itself, however, must be your own unaided work.

It is also advisable to enclose with photographs or drawings a short description of the principal features of your model, mentioning any points of special interest you wish to bring to the attention of the judges.

EQUAL CHANCE FOR ALL

The Competition is open to model-builders of all ages in any part of the world, and in order to give everyone a fair chance entries will be divided into two separate Sections as follows: Section A, for competitors who will be under 14 years of age on December 31 next; Section B, for competitiors aged 14 years or over on that date. *In each of these Sections a separate set of prizes will be awarded as detailed in the panel on this page.*

The judges will award the prizes for models that are original in subject, and are well-proportioned and sturdily constructed. Competitors who possess only small Outfits need not feel that they will not stand much chance against competitors with large Outfits at their disposal. Small, well-built, sturdy and original models will have a far better chance of success than a large and complicated structure that is rickety in construction and poor in design, and which does not show much originality in its subject.

The following notes may be helpful to competitors, especially those who have not entered a *Meccano Magazine* Model-building competition before:

You may choose any subject you like for your model, but you should be careful to select one that you can reproduce realistically with the Outfit you possess. For instance, if you have only a small Outfit it would be difficult to make a really good model of a large type of crane. If, on the other hand, you choose a simple truck or windmill as your subject, the probability is that you will be able to make a really good job of it. It will also help you on the way to success if you choose a model that "works".

HOW TO POST YOUR ENTRY

Before posting your entry write your age, name and address, and the letter A or B, indicating the Section in which you are entering, in block letters on the back of each photograph or drawing. You should address the envelope: "Winter Model-Building Competition No. 1, Meccano Limited, Binns Road, Liverpool 13."

THE PRIZES

The following prizes will be awarded in each Section of the Competition:

SECTION A

(Competitors under 14 years of age on December 31 next)

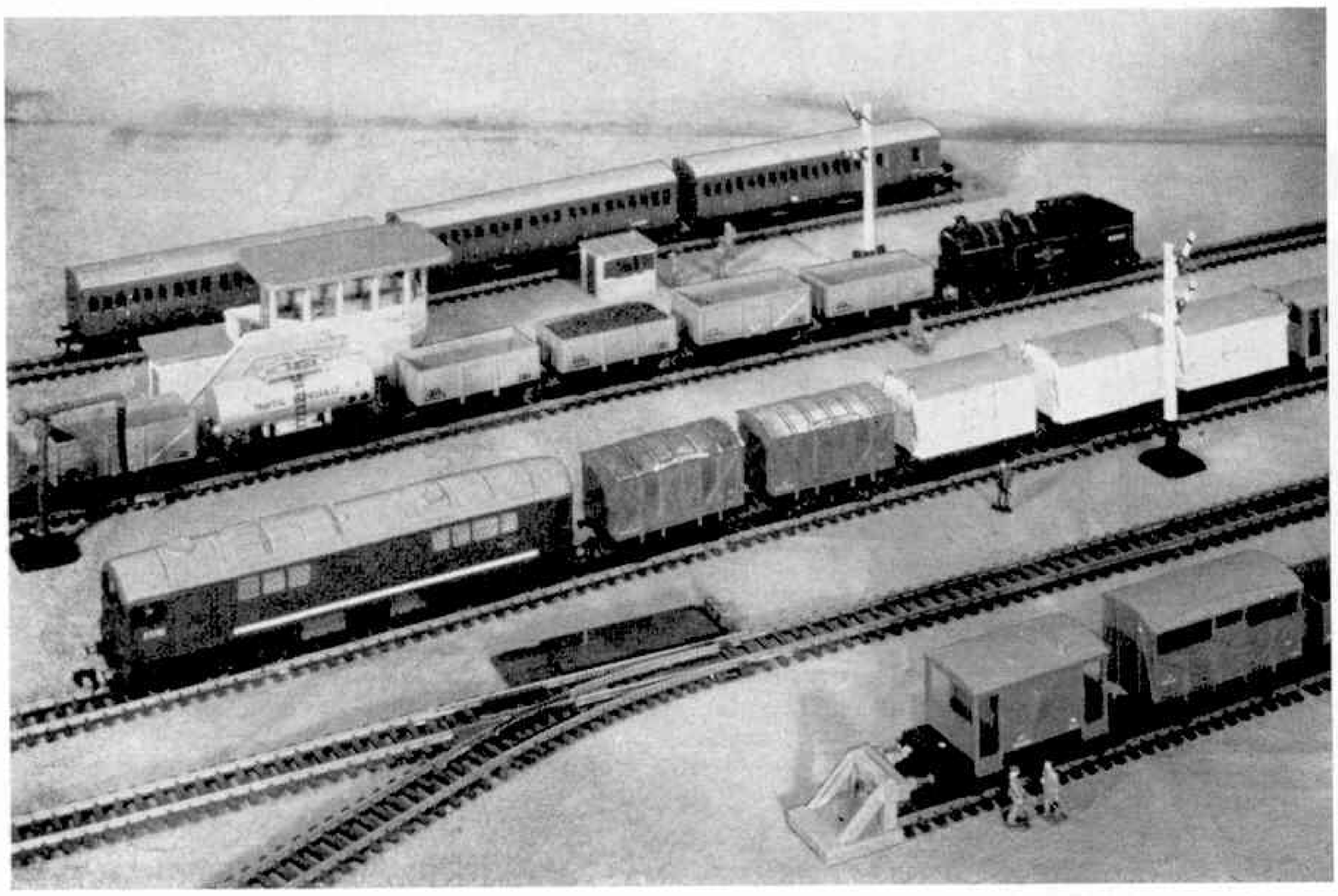
First Prize Cheque for £5.5.0
Second Prize Cheque for £3.3.0
Third Prize Cheque for £2.2.0
Ten prizes each of 10/6d.

Certificates of Merit also will be awarded in this Section to those competitors whose entries just fail to reach prize-winning standard.

SECTION B

(Competitors who will be aged 14 or over on December 31 next)

First Prize Cheque for £7.7.0
Second Prize Cheque for £5.5.0
Third Prize Cheque for £3.3.0
Ten prizes each of £1.1.0



Hornby Railway Company

By the Secretary

Co-Bo Diesel Is Here— And A New Pacific

MORE LOCOMOTIVES IN TWO- AND THREE-RAIL

AS promised at the conclusion of our talk last month, I am now able to tell you more about some of the new Hornby-Dublo items already available or due to appear soon. One new item that is sure to arouse your interest is the Hornby-Dublo Co–Bo Diesel Locomotive, available in Two-Rail as No. D5702 and in Three-Rail as No. D5713.

It represents a prototype which is unusual in having a six-wheeled bogie at one end and a four-wheeled bogie at the other. The locomotives of this class belong to Type 2 in the B.R. diesel classification and have 1,200 h.p. 8-cylinder diesel engines. They were built by Metropolitan-Vickers, for London Midland Region fast passenger and freight duties.

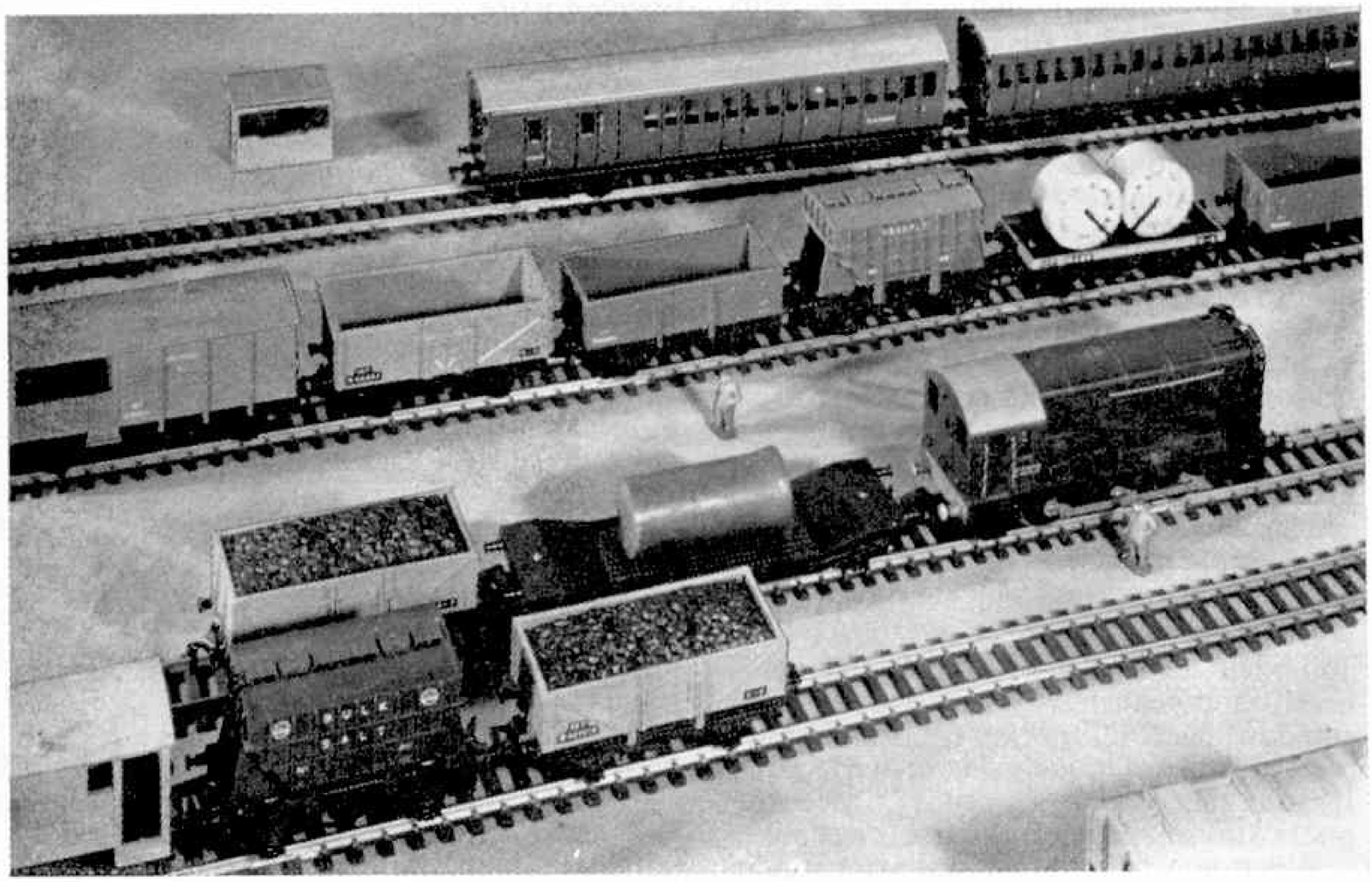
In the models the motor, which is incorporated in the six-wheeled driving bogie, is of the Ring Field type and is similar to that fitted to the Co–Co Diesel Locomotive, an engine with remarkable load-hauling capabilities and general performance, as the test report elsewhere in this issue clearly shows. The bogie side frames are well detailed and incorporate in a convincing manner the axleboxes, springs and outside equalising bars that are found on the real locomotives of this class.

The Co–Bo bodywork is die-cast in stout metal and follows the practical outlines of the real thing. It includes the various air intakes, ventilating louvres and other similar features characteristic of diesel locomotives. At each end there are representations of the combined headlamp and classification discs. The finish is in B.R. Standard locomotive green, with a broad white band at floor level from cab to cab. Cab window openings are glazed, by the way, with clear plastic, a touch that helps the realistic appearance a great deal. The roof is grey in colour and on it the exhaust trunks, fan grid, hatches for inspection and maintenance operations and other similar details are effectively modelled.

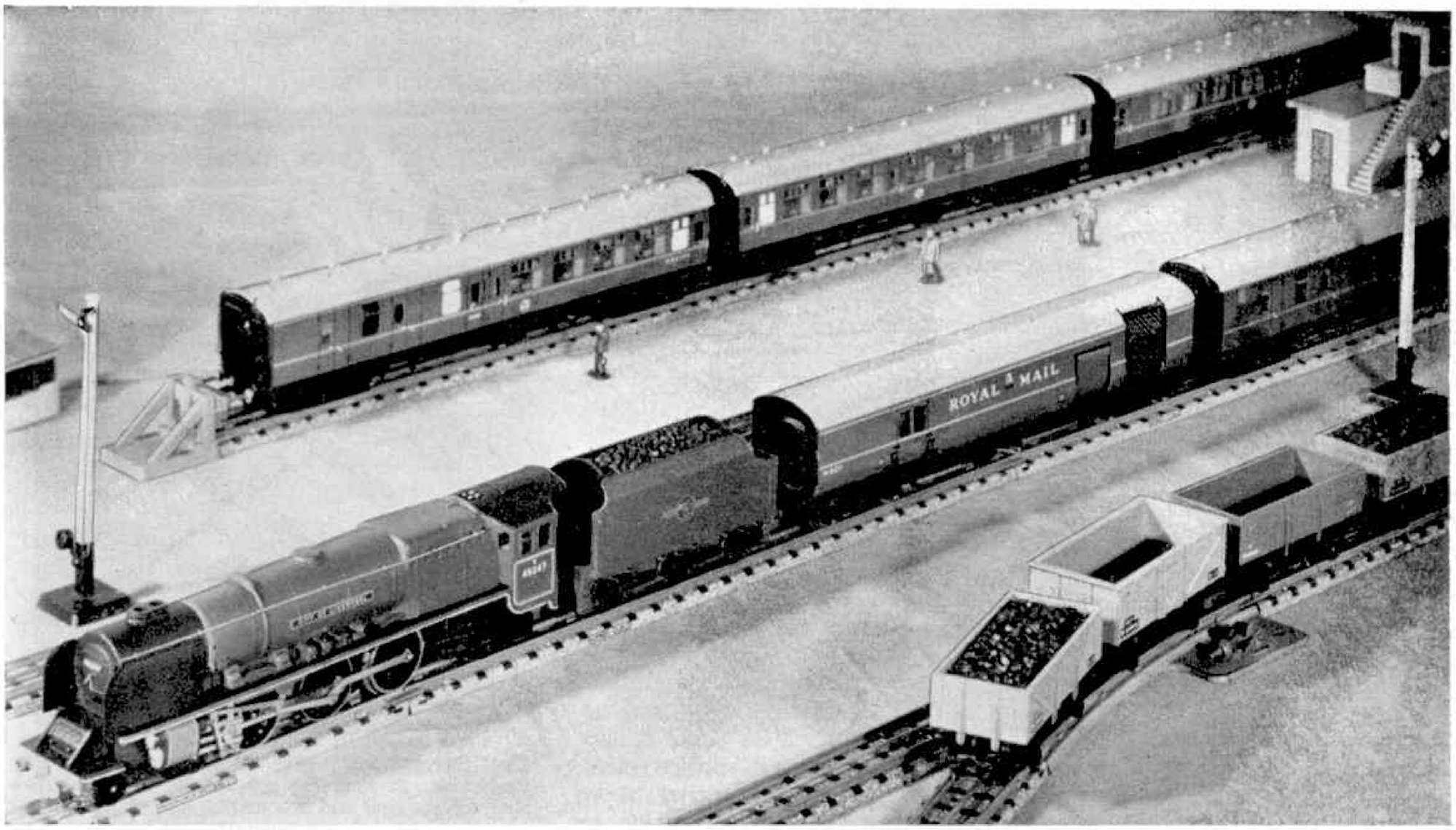
"Dorchester" and "City"

As the new Two-Rail Hornby-Dublo Locomotive *Barnstaple*, the rebuilt West Country, was described in considerable detail in these pages as recently as October last I need not say a great deal here about the Three-Rail version, named *Dorchester*, S.R. No. 34042. From front to rear it has the same distinctive air as the real engine, with its massive-looking, spokeless driving wheels, above which are carried the high-pitched running plate and tapered boiler barrel, the latter preceded by the long smoke-box that is closely flanked by the smoke deflector plates and crowned by the wide chimney.

Another new Three-Rail engine, L.M.R. *City of Liverpool*, which is



(Above) The latest Hornby-Dublo Diesel, Co-Bo No. D5702, is at the head of a fast freight train in this picture. (Right) An assembly of Hornby-Dublo rolling stock, including the new Wagons referred to in these pages.



"City of Liverpool", recently introduced, hauls an express with the T.P.O. Mail Van next to the Tender, on a Hornby-Dublo Three-Rail layout.

attractively finished in maroon livery, replaces *Duchess of Montrose* in the Hornby-Dublo Three-Rail range. The general design and layout of the motor is similar to that employed in the Two-Rail *City of London*.

City of Liverpool reproduces effectively the imposing lines of the later 4–6–2s built for the former L.M.S., which have been familiar on heavy long-distance expresses for quite a long time.

The long smoke-box, double chimney and the well-detailed tapered boiler barrel and fire-box of the new model capture entirely the look of the real engine, while specially fascinating "on top" is the inclusion of the four safety valves in a little "well", as it were, in the cab roof. What I may term side detail includes the vacuum ejector and piping, mechanical lubricators, sandbox fillers and stays.

A minor change is the omission of the dummy coupling link from the hook on the front buffer beam. This is becoming effective on all Hornby-Dublo Locomotives that possess this feature.

The tender body is a moulding with a pleasing amount of detail. Behind the tidy load of coal come the water filler, pick-up dome and tank vents. Lamp brackets, steps, and even the small works plate with the letters "L.M.S." carried by the real tenders, are all present.

Castle and 2–8–0

A recent development of importance that many Hornby-Dublo owners will welcome is the application of the Ring Field Motor, with its smooth development of power, to Three-Rail Castle and L.M.R. 2–8–0 Locomotives. With this development comes a change in the identities of the engines concerned, No. 7013 *Bristol Castle* being replaced by the new No. 5002 *Ludlow Castle*, while the original 2–8–0 No. 48158 gives place to No. 48094. Owing to modifications necessary in the housings to accommodate the Ring Field Motor it is not possible to apply this type of motor to the older engines mentioned.

New Open Coaches

The latest Hornby-Dublo passenger stock, listed as Nos. 4060–4063, represents B.R. Standard open coaches, of first-class and second-class types. Open coaches are not divided internally into compartments reached by means of a side corridor, but have an aisle or passage running between the seats arranged on either side.

Needless to say, the correct internal arrangements are followed in these fine Hornby-Dublo vehicles, which have representations of the tables and seating found in the real stock. Externally, the bodysides are of metal, accurately printed to display the livery, lining and other features characteristic of the real vehicles.

Hornby-Dublo Open Coaches are available in W.R. brown and cream, and in the B.R. Standard maroon, with the B.R. emblem strikingly displayed on the lower bodyside panels. The ends and roofs and underframe details are of moulded construction. Bases and bogies are of metal. The Open Coaches offer plenty of operating possibilities and we will have to talk about these on another occasion.

The Hornby-Dublo No. 4323 4-wheeled Utility Van is based on a useful type of long-wheelbase vehicle developed by the former Southern Railway, for running in passenger or freight services, and capable of carrying a wide variety of traffic in a body of ample capacity. It is finished in attractive Southern green, and incorporates the basic features of the real vehicle in a plentifully-detailed moulded body, a special attraction being opening doors in the sides. Window openings are "glazed" with a clear plastic strip on which is a representation of the window protecting bars. Side and end features, such as angle irons, ventilator panels, hinges and straps, door handles and grab irons, and even such minute fittings as the hooks that hold the real doors open when alongside the platform, are beautifully modelled in relief. The roof, of characteristically lofty "Ashford" contour, is perfect in details.

In keeping with modern tendencies in special vehicles adapted to the needs of particular kinds of traffic are two new vehicles in the Hornby-Dublo System, respectively the No. 4626 "Presflo" Bulk Cement Wagon and the No. 4627 I.C.I. 20-ton Bulk Salt Wagon. Each represents a vehicle of specialised type for the handling in bulk of their powdery loads, having bodywork of enclosed hopper form and belonging to the class known as pressurised vehicles. In these air pressure is used to force the contents out of a wagon of this type, since substances like cement or salt, carried in bulk, tend to settle and pack hard when in transit, and they are reluctant to move under the influence of gravity alone when discharged through an outlet in the base of the vehicle.

These vehicles have provided splendid opportunities for realistic modelling in the moulded bodywork of the Hornby-Dublo Bulk Cement and I.C.I. Bulk Salt Wagons. Basically, they are of similar character and appearance, with bodies of hopper form.

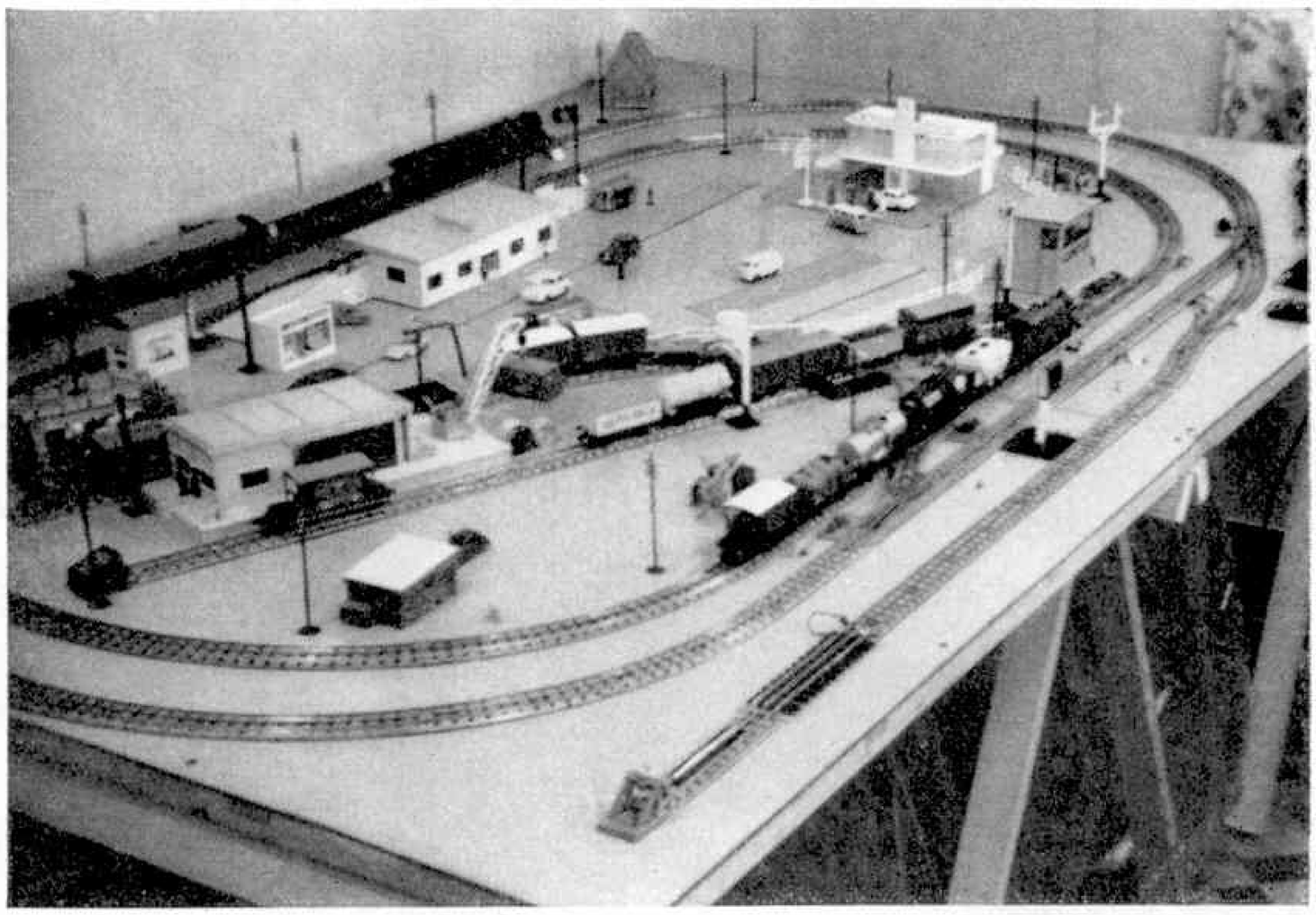
The bodywork of the Bulk Cement Wagon is finished in B.R. bauxite brown, with the code name *Presflo* on each side. The Bulk Salt Wagon is distinguished by

(*Continued on page 467*)

Spare Room Scheme In Three-Rail

By

LAYOUT MAN



The Hornby-Dublo Three-Rail layout of Ray Parkerson, showing the simple yet effective track plan and the neat and tidy appearance of the railway in general.

THE Hornby-Dublo Three-Rail layout in the picture opposite is owned by *M.M.* reader Ray Parkerson, of Letchworth Garden City. The line began a number of years ago and traffic in those earlier times was worked by the components of the Hornby-Dublo 0–6–2 Tank Goods Train Set and *Duchess of Atholl*, with L.M.S. Corridor Coaches. At the time the main line was single track and the railway was situated on the dining room table. After a little development in this early stage there came a suspension of activity, largely owing to removal to a D.C. area.

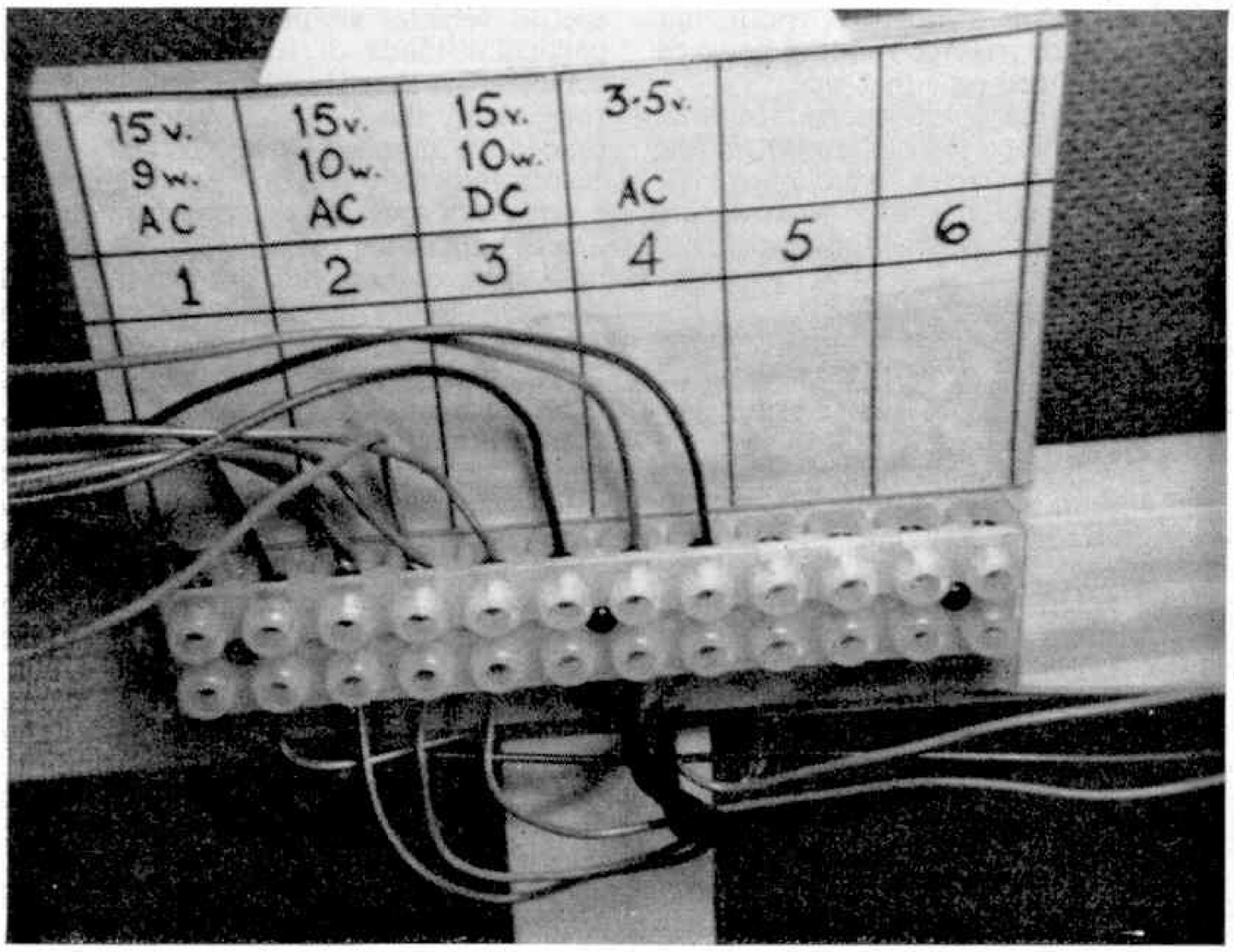
More recently, with an A.C. mains supply becoming available, the railway has come into being again, in a more permanent situation in a spare room. Here, it has progressed to the form shown in our picture, but before it could do so it was necessary to construct a baseboard. The fact that the room contained a certain amount of furniture did not hinder the installation of the track once the baseboard, supported on trestles, was built. It is made in two parts, each 4 feet by 3 feet. The trestle form of construction saves space in the room, as it is possible for a divan to be accommodated underneath the railway. Hornby-Dublo owners who have engineered their layouts in spare room situations will be familiar with the constructional problems that seem to be inherent in this sort of thing.

As can be seen from the illustration, two main running lines follow the familiar oval plan and there are Points forming a cross-over between the inner and outer tracks. As sometimes happens on a layout where two Train Sets have formed the equipment with which the railway began, the curved sections of inner and outer tracks are laid with the original Curved Rails of the standard 15-inch radius. This means that the curved sections of the two tracks are not parallel to one another, but the appearance of the finished layout does not suffer unduly. At the ends of the layout the two quarter circles of the outer track have a Straight Half Rail between them. This arrangement will be familiar to the many Hornby-Dublo owners who have used it in the course of layout development.

Siding Re-laid

A change made since the photograph was taken is that the siding ending at the Buffer Stop in the foreground is now laid in a trailing direction to the outer main track. This is an improvement and brings the layout hereabouts into line with actual practice.

From the inner main track, sidings branch off to serve a goods depot constructed from the standard Kit No. 5020 and to judge by the upper illustration there is plenty of traffic to be dealt with. Beyond the yard formed by these sidings is a broad roadway and this serves a passenger station laid alongside the inner main track. The owner remarks that only the basic railway requirements have been provided so far, but there are plans in hand for the building up of lineside features of



The home-made distribution panel through which current is fed to the track sections and electrically-operated accessories, showing the key to the input and output circuits.

one kind and another. This development will certainly add to the general effect.

Traffic is worked at present by the two original locomotives, but recently there have been various additions in the matter of rolling stock, both passenger and goods. The present stock, therefore, incorporates a pleasing blend of the old and the new in Hornby-Dublo.

The electrical arrangements for supplying current to the Electrically-Operated Points, Signals and Uncoupling Rails are very complete and a feature of the wiring system is that the terminal board or, rather, distribution panel shown in the lower illustration on the previous page forms an important link between the actual power source and the different distribution circuits. This panel was made at home by the owner of the layout, the idea of this refinement being to keep the wiring as a whole as simple as possible, with the different circuits readily identified, especially in view of the numerous electrically-operated accessories, isolating sections, and the lighting system that has been applied to the buildings so far in use, and to provide for further developments of this kind. The use of the distribution panel has considerable advantages as there are several separate and different sources of power in use, with varying outputs. A layout that has been developed over a fair period of time is almost certain to have some variety in its electrical appliances.

The panel is simply a piece of seven-ply wood on which is mounted a 12-way terminal strip, which is a commercial electrical article. Output details are charted, as it were, on the panel and in the spacing of the columns relating to the various power sources allowance was made for the number of wires that would have to be connected to the output side, so the identification details relating to the output connectors were spaced away from the latter, with guide lines drawn down to them. The identification card is held behind a glass front and is removable so that in the event of any additions being necessary, for instance in columns 5 and 6 which are spare at present, these could be made without trouble.

Appliances are numbered

Each of the electrical appliances in use, such as power units or transformers and controllers, is numbered to correspond with the number of the column on the panel to which its output is taken. There is one supply for Electrically-Operated Points and Signals while another similar output is reserved for Electrically-Operated Uncoupling Rails. It is of interest that the 3.5 volt output in Column 4 comes from a pre-war Hornby Gauge 0 Transformer of the long-obsolete T20A type. This has a lighting output originally provided for Gauge 0 accessories.

The distribution panel is not within the view of the operator, as the owner of the layout has aimed at having the minimum of control gear mounted on the baseboard surface. The various power sources—with the distribution panel that forms a key to them and to the other wiring—are mounted underneath the baseboard.

"Time Goes So Quickly"

It is not surprising that our fellow enthusiast writes "I can spend hours in my special room, shunting and marshalling, controlling the trains on each circuit, operating Points and Signals, but the time goes so quickly that I have to pack up too soon for my liking. Incidentally, "packing up" means ensuring that the telegraph poles are laid down flat (as they are not yet fixed), and covering the whole layout with a large sheet of Polythene to keep out the dust." The latter is a wise precaution that all layout owners might adopt with advantage.

FOR THE TWO-RAIL ENTHUSIAST

VARIETY IN TRAIN OPERATION

OUR recently-introduced series of Two-Rail track projects is proving very popular, and here is the third of the monthly articles giving details in picture and diagram of a simple layout offering a good variety of train operations. The layout has been designed to fit on a baseboard measuring 8 feet by 5 feet. This gives a margin round the outer edge of the track and also allows space for the power control unit and any switches for Electrically-Operated accessories which may be added or used in place of Hand-Operated items such as Points, Signals or Uncoupling Rails.

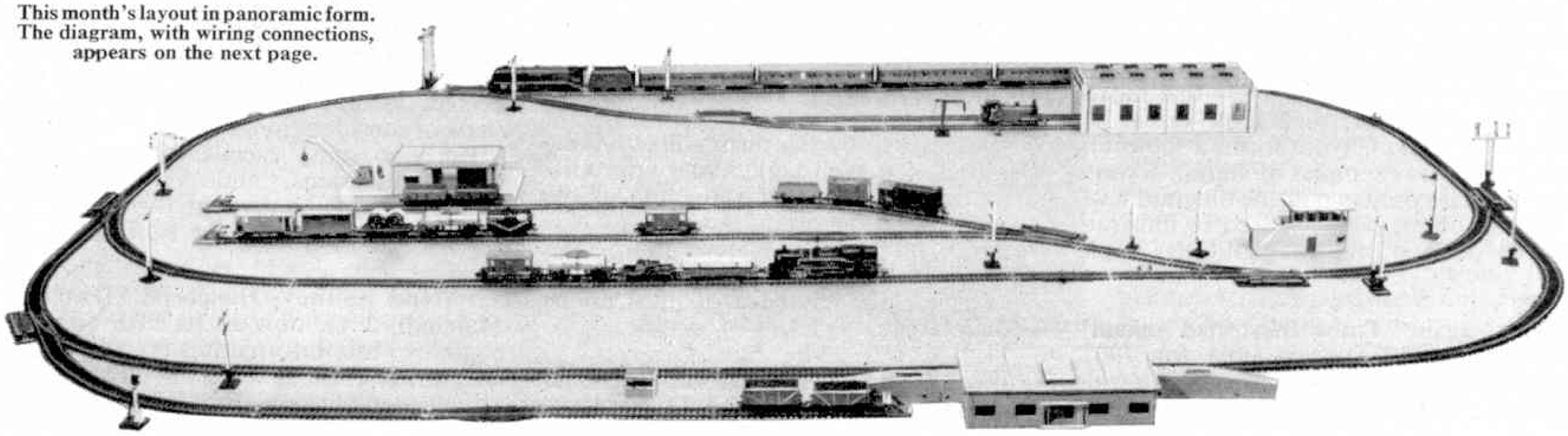
The main line has an inner loop which allows a choice of route for the trains. As it is a single track, there is no preferred direction of operation as trains can travel both ways. The sidings leading off the inner loop have been arranged so that an engine hauling a train in an anti-clockwise direction can back-shunt its vehicles or just part of the train if desired, an Uncoupling Rail being situated on the main line to allow this to be done.

By THE LINESMAN

Following our practice of showing the wiring for an Electrically-Operated accessory, our choice this month is a Single Head Colour Light Signal, which works in conjunction with the nearby Points serving the station siding. By wiring in this way a hand switch is not required. When the Points are set to allow a train to leave the siding, the green aspect shows, otherwise the signal remains at Danger, showing, of course, a red light. Replacing the Hand-Operated Point with an Electrically-Operated Point will not alter the wiring for the signal.

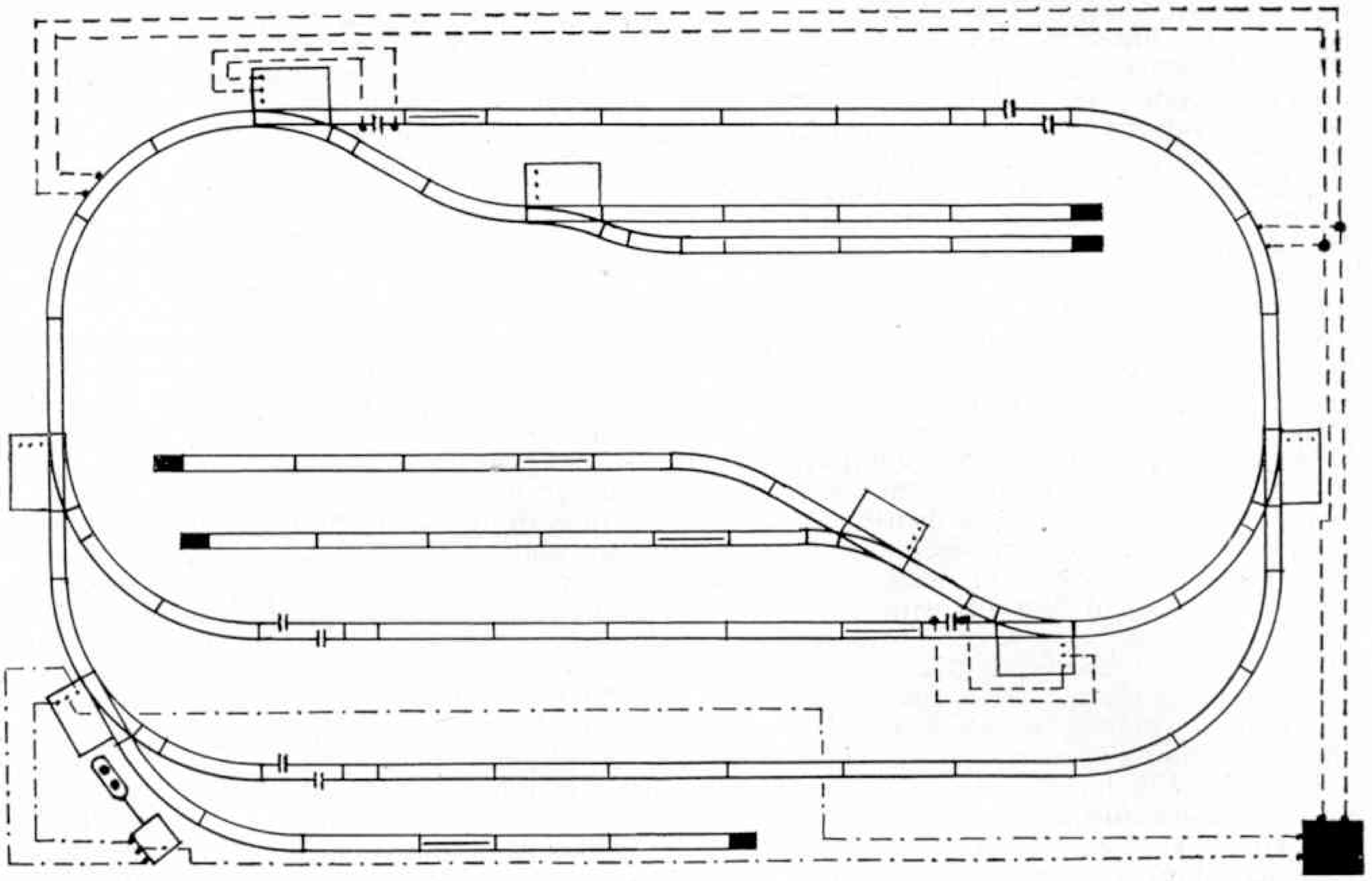
The panoramic view of the layout shows clearly where the various accessories are placed, although their positions can be varied to suit the wishes of the operator. Signalling has been arranged for two-way operation. A point to note in connection

This month's layout in panoramic form. The diagram, with wiring connections, appears on the next page.



ITEMS REQUIRED

17 Curved Rails	2710
2 Curved Terminal Rails with Suppressor	2714
1 Curved Half Rail	2711
7 Curved Quarter Rails	2712
33 Straight Rails	2701
4 Straight One-Third Rails	2703
7 Straight Two-Third Rails	2702
2 Straight Two-Third Single Isolating Rails	2738
3 Straight Two-Third Double Isolating Rails	2739
5 Uncoupling Rails, Hand-Operated	2745
3 Left-Hand Points, Hand-Operated	2729
4 Right-Hand Points, Hand-Operated	2728
5 Buffer Stops	2450
1 Power Control Unit	



with this series of layouts is that they follow real railway practice as far as possible within the limitations imposed by the oval track formation, the latter being necessary for continuous running. This means that the layouts can be signalled more or less correctly. Either semaphore or Colour Light Signals can be employed according to the desire of the operator. Hand-Operated Signals should be placed in positions within easy reach of the control centre; those situated remotely are best electrically operated. The Switches for Electrically-Operated Signals and Points can be banked in groups by means of Hornby-Dublo Switch Grouping Rods, to form in effect a miniature lever frame, resembling the kind found in signal cabins in actual practice. The signals and points can be numbered, with the number repeated opposite the lever so that quick identification is afforded.

Another layout in this series will appear in the January 1962 edition of the *M.M.*

NEW BOOKS FOR RAIL ENTHUSIASTS

"Trains Work Like This" (Phoenix/Roy Publications, 9/6) by David St. John Thomas is one of a series of "Science Works Like This" books. This is a book for young people, but it can be read with profit by many grown-ups. It shows how railways are an essential service and how their character is changing, to some extent, with the progress of the modernisation scheme of British Railways. Day-to-day working of the trains and forms of motive power are considered, while track and signalling sections lead up to one on keeping traffic moving. How this movement is dependent to a large extent on track and station layout forms a subject in itself, and the examples of station layouts included are only two of the diagrammatical, and other, sketches used to illustrate points dealt with throughout the book.

* * * *

Once again **"Trains Illustrated Annual"** (Ian Allan, 10/6), this time for 1962, makes a welcome appearance, with a wide variety of subjects covered in an interesting manner. From a review of British Railways' experience with high-voltage A.C. electrification, and the progress made with diesel locomotives, we pass to a section dealing with the mysteries of locomotive "diagramming", or working arrangements.

There follows the story of the "Sud Express", with its Madrid and Lisbon portions, the French Railways train which makes the world's longest all-year-round non-stop run over the 359.8 miles between Paris and Bordeaux. In striking contrast are notes on South Wales branches and the working of the S.R. Wenford Bridge china clay line by the three still-surviving Beattie 2–4–0 Well tanks. Very appropriately, in view of the introduction of the type 5 Co–Co diesels on the King's Cross route, Cecil J. Allen reviews more than 50 years of steam travel on the same route. The usual high standard of illustrations is maintained.

* * * *

In the **"South Eastern and Chatham Railway"** (Ian Allan, 30/–), O. S. Nock, B.Sc., deals with the system that was so named from 1899 until 1923, when it lost its identity in the Southern Railway. Nowadays, it forms the Eastern section of the Southern Region of British Railways. But to lead up to the story of the S.E.C.R. the book necessarily gives an outline of events in the days when the South Eastern and the London, Chatham and Dover Railways under their respective rival chairmen, Edward Watkin and J. S. Forbes, were independent and fiercely competitive for local and for cross-Channel Continental traffic, before the fusion of their interests under a Managing Committee.

The progress made by the jointly-managed concern during the present century is well described, engineering, traffic and locomotive developments being given special attention. As might be expected, locomotive performance has its share of consideration, as well as signalling. There are some excellent illustrations, several diagrams, and various tables relating to locomotive performance. A useful index completes the work.

* * * *

"Model Railways Handbook" (Percival Marshall, 3/6), now in its fifth edition, contains basic information on all gauges and forms a useful work of reference for all interested in miniature railways.

WITH THE SECRETARY

Club and Branch News

CLUB NOTES

ASHTEAD FREE CHURCH M.C.—At one meeting each member was invited to give a short talk about Dinky Toys, and an interesting discussion ensued. *Secretary:* Peter Camper, 115 Newton Wood Road, Ashtead, Surrey.

NORTH END (PORTSMOUTH) M.C.—Members are busy building models for display at the Club and associated H.R.C. Branch Christmas Bazaar. T. Chase received a Meccano Outfit recently as a birthday present, and with it he is busy constructing a model specially for display at this Bazaar. *Secretary:* Mr. A. J. Nicholson, 213 Sultan Road, Buckland, Portsmouth.

AUSTRALIA

MAYLANDS M.C.—At the time of writing, Alan Vidler's four-wheel drive motor chassis and Reg England's model motor bus and taxi are being exhibited in the Club shop window mentioned last month. The Parents' Committee recently arranged a cake stall at this shop, for which Mrs. Bransby made a cake like an old treasure chest with "money and jewels" spilling out of the open lid; this was raffled, and raised over £2 10s. 0d. The cake stall made a profit of about £10. The plans for the new Club building have been approved by the local authorities, and all is now set for the actual construction. It is estimated that the building will cost about £6,000.

A party of 22 Club members took part in the Australian Railway Historical Society's picnic rail trip to Chidlows on Sunday, August 13, the train stopping specially at Maylands to pick up the party. The coaches were hauled by an oil-fired "U" class steam locomotive, one of the 14 originally built in England for war service on the Sudan Railways. The train stopped at several places of interest on the way so that photographers could take photos as souvenirs of the trip, and on the way back passed through the 1,115 ft. long Swan View tunnel, the only one on the Western Australian Railway system. *Secretary:* Trevor Criddle, 17 Kenilworth Street, Maylands, Western Australia.

NEW ZEALAND

CHRISTCHURCH M.C. — At one model-building meeting the subject was *A Simple Model*, in which only 15 Meccano parts were to be used, excluding Nuts and Bolts. In spite of this severe restriction, some surprisingly good models were produced. *President:* Mr. C. E. Saunders, 6 Walsall Street, Riccarton, S.W.1, Christchurch, New Zealand.

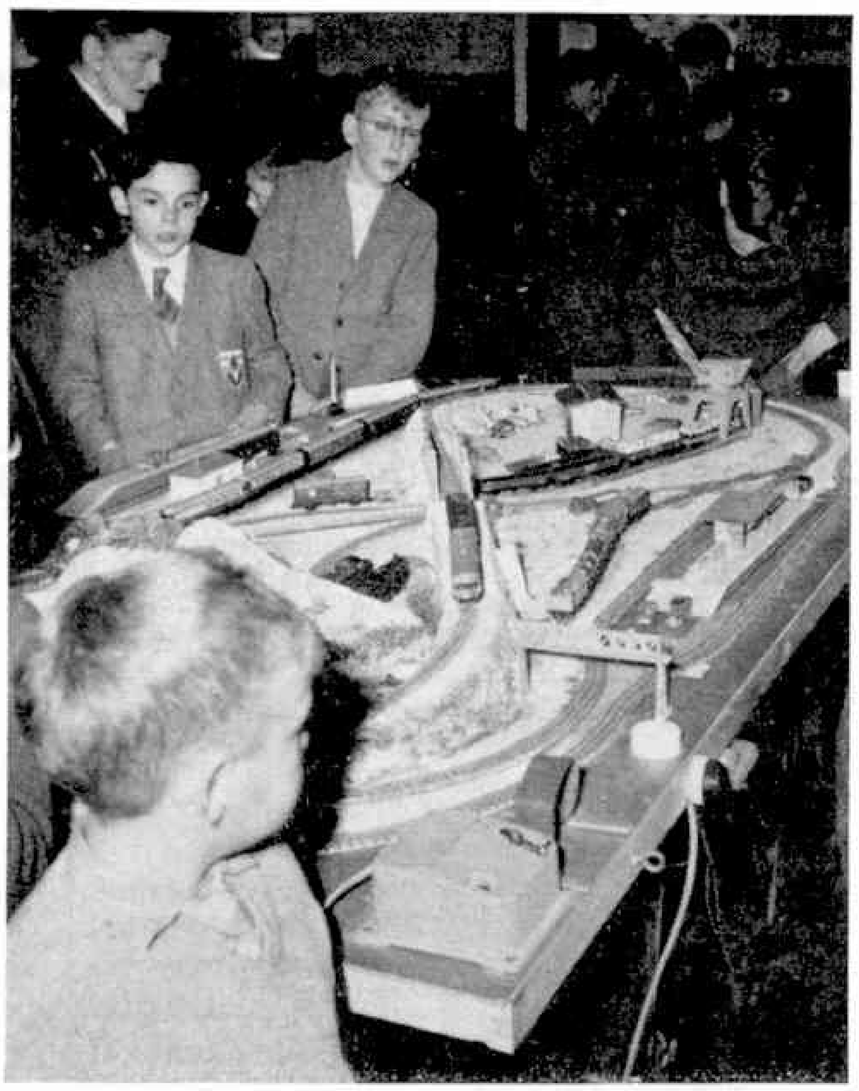
ST. JOHN'S (DUNEDIN) M.C. — A Meccano parts Names contest proved exciting, and J. Salinger got top marks—8 out of 10. It has been decided to change the system of awarding merit marks for Meccano models. In future, instead of models being marked according to Outfit-size grouping, both the age of the model-builder and the size of Outfit used will be taken into account. The main activities this term include a model bridge-building competition, trolley races and mystery cycle rides. The annual film and tea evening was held on September 22, when the President showed three interesting films—one on motor cycling, another on shipbuilding and one on atomic energy; all of them were both instructive and entertaining. After tea there was an exciting Table Tennis competition, which was won by the President! This special evening was the occasion of the Club's birthday. It has been decided to hand-bind all the Club's *Meccano Magazines*.

The Christchurch M.C. having been fully occupied with preparations for their splendid display at the recent New Zealand Industries Fair (reported in last month's *M.M.*) the projected inter-Club model-building competition between Christchurch and St. John's has been deferred until early next year. *Secretary:* William Earl, 60 Ann Street, Roslyn, Dunedin, New Zealand.

CHRISTMAS GREETINGS

I am delighted to have the opportunity once again of wishing every member of the Meccano Guild and Hornby Railway Company a very Happy Christmas. I expect that, as usual, most Clubs and Branches will end this first of the winter sessions with a grand Christmas party—to which parents and friends of members will be invited—and at which there will be lots of good things to eat and fun and games to round off a capital evening.

If Club and Branch photographers rise to the occasion there should be some excellent photographs of the event for me to see, and perhaps publish, in due course.



A typically busy scene during a recent Exhibition arranged by the Ashtead Free Church Meccano Club, Ashtead, Surrey. There was also a fine display of working Meccano models.

NORTHERN NIGERIA

GINDIRI BOYS' SECONDARY SCHOOL M.C.—Members continue to show keen enthusiasm for Meccano model-building, and aim at constructing the best models they can with the equipment available. Several of the larger and more complicated models have been tackled, and an Oil Tanker and Beam Bridge completed. Now the more advanced model-builders are at work on a Mechanical Man and are making excellent progress. *Secretary:* James T. Akuse, Boys' Secondary School, P.O. Barakin Ladi, Via Jos, Northern Nigeria.

BRANCH NEWS

LECONFIELD CLOSE (HULL) — This Branch was formed early last September and is now well into its stride. Both passenger and goods trains are operated on the Branch layout, and at present the members' two favourite locomotives are the *Cardiff Castle* and the *Golden Fleece*. The 8–10 years old members have been given practical demonstrations in the making of model scenery from card and wire wool. It is planned to have occasional discussions on railway topics. *Chairman:* Mrs. J. A. Timms, 44 Leconfield Close, Greatfield, Hull.

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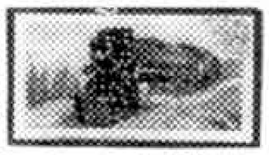

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Carreras	50	Film Favourites (1938) ..	**2/3**
Carreras	50	Palmistry	**3/–**
Gallaher	48	British Birds	**4/3**
Gallaher	48	My Favourite Part (1939)	**2/–**
Horniman	48	Wild Animals	**2/9**
Lifeguard	25	British Butterflies ..	**1/9**
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FOR OTHER STAMP ADVERTISEMENTS SEE ALSO PAGE 465

For Stamp Enthusiasts

Christmas Stamps

By F. E. Metcalfe

I DO not know whose idea it was to commemorate Christmas with stamps, but it is certainly a plan which is growing. It would not surprise me if our own Post Office falls into line in due course, now that it has at last become aware of the presence of collectors with real money to spend on "bits of paper". Of course, Christmas stamps have been issued by one country or another for some years now. But, perhaps because it is only a year or two since countries in our own Commonwealth first joined in, I had not realised how many of these stamps there were until the beginning of this year. Then I was shown a collection which a dyed-in-the-wool collector had put together and given to his son, firstly as a Christmas present (aren't there some nice fathers about?) and secondly to tempt the

youngster to take up a hobby which had provided the father with so much pleasure in the past.

I have mentioned that British Commonwealth countries only recently joined the cult. If I remember correctly it was Australia that first took a hand in the game and issued two stamps in 1957. I am afraid the design did not meet with everybody's approval, which is not to be wondered at as Australians are very critical about their stamps, as we are about ours, with, I think,—speaking generally—less reason. Anyhow, Australia's first venture was an adaptation of a painting by Sir Joshua Reynolds. It is illustrated here, so you can see what you think about it. I must say I like it, even though the colours are a bit drab, which is the only criticism I have to make about most of Australia's stamps. One good point about this particular stamp—and I am glad to say it applies to the majority of Australian issues—is that a pair costs only a few coppers—an important point to most of us.

The following year the same country released another pair, with the design still a religious subject, and still cheap to buy. In 1959 we only got one stamp, with the design of the Magi guided by the Star, a well thought-out effort and a fine printing job, the critics notwithstanding. Last year the single stamp issued depicted an open Bible, with a lighted candle. If this design was not infinitely better than that stamp of ours which was recently awarded a world prize then I never want to see another scrap of stamp paper.

The 1960 design did not end with Australia, for Norfolk Island came into the picture and to do so copied that used by its mother country. This year both Australia and Norfolk Island are again saying "Happy Christmas" with stamps, and what a nice idea it really is, for there is no attempt to exploit anyone, as is often the case when special issues are released. Up to now only stamps of low face value have been emitted, and what makes it nicer still for young collectors is that so many of the stamps are used on letters that they only cost a copper or so each, even after several years.

Well, with Australia making such a success of it all it was only natural that a sister country would come in on the scheme, and last year New Zealand issued its first Christmas stamp, a most imposing item. Here was another nativity design, an adaptation of a Rembrandt picture. Printed normally in two colours, red and deep brown, some of the stamps have been found with the red missing (such a stamp is printed in two operations, and one was missed) and these errors have been selling for many, many pounds. So we will have to be satisfied with the bi-coloured, and very nice they are, too. This year the same trio—Australia, New Zealand and Norfolk Island—have all issued Christmas stamps, and they are likely to continue doing so.

That is the Commonwealth contribution; but what about other foreign countries? Well, you can be sure that some of these are not going to miss such a chance to tempt collectors to part with a bit of their spare cash. They will not need to part with much, it must be admitted, for on the whole only stamps of low face value have been issued under this heading. A search around will reveal quite a few items, such as the jolly stamp illustrated here which is one of several issued by Cuba, of all countries. These Cuban stamps have often been taken for Christmas seals, about which I would like to write a few words.

Around the time these lines appear in print, readers may be getting letters from overseas, as well as from places in this country, which bear small bright coloured labels which, for one thing, remind us that Christmas is near. They will also remind us, if we spare them a few moment's thought, that somebody—probably the sender of the letter—has been contributing to some good cause or other. No doubt you have been doing the same, but I wonder if you have ever thought of forming a collection of these Christmas seals, as they are generally described? Believe me, many collectors are going in for them nowadays. I heard recently of one collection which contains more than 3,000 specimens, and the collector concerned mentioned that only the large

album which contained them had cost him anything. I did not see this collection, but I have seen enough seals to realise that every year about this time there are plenty of them about, and what is better still for those who want to go in for them, more and more countries are adopting the idea.

Apart from our own country, Canada, Denmark, South Africa, etc., have all produced some excellent designs. I can well imagine that a nicely-mounted collection of Christmas seals—which need cost little more than a bit of enterprise—could well prove more attractive to your non-collector friends than one of those costly collections of postage stamps, in which, as is so often the case with the older issues, the designs are as dull as ditch-water. There is nothing dull about the Christmas seals, so what about it?

Stamp Gossip

Thematics

COLLECTORS are often heard to say that while—as a sideline at any rate—they would like to do one or two thematic collections by collecting only British Commonwealth stamps, there is no scope to gratify this wish. Well, it can be pointed out to them that although it is true that with so many attractive foreign stamps about bigger thematic collections can be made, it is at the same time surprising what fine "theme" collections *can* be formed with Commonwealth stamps. Why, even the stamps of the present reign

provide plenty of material to cover all kinds of interesting subjects. Proof of this contention is to be found in the lists which the Crown Agents publish in their monthly bulletin. For instance, in the July number a list of "QE" colonial stamps devoted to industry was given, and—who would have thought it?—on current colonial stamps we get illustrations as diverse as dhow building, canoe making, pitch mining, gold dredging, etc., etc. Don't overlook the fact that there are many stamps from the Dominions (if I may still use that now outdated designation) which can be added to these colonial lists. To be candid, I am sorely tempted myself to have a go at these "QEII" theme collections. Think it over. Your dealer will no doubt be able to help you.

NO SNAKES IN IRELAND

If I were asked "Which is the least mercenary country in the world?" I think I could supply the correct answer—Ireland. Last year, our neighbour issued a pair of "Europa" stamps and, although they have only a face value of 1/9d., they are today being snapped up in England wherever there is anyone foolish enough to accept a £1 or so, to be resold later in the U.S.A. for six dollars or more, or in Europe for the equivalent of £2 or better.

Why such a rise? Well, these stamps form part of the "Europa" group, and it is estimated that there are more than half a million collectors seeking to complete a collection. "Ah!", the average postal administration might say, "here's a chance to cash in on such a demand, so let's do another set this year." Most of the countries in the "Europa" group—including our own—have done just that, and thus made certain of sales to collectors amounting to a good few thousand pounds, but not Ireland; and why not that country? Because the fifteenth centenary of the death of St. Patrick fell near the date when the "Europa" stamps had to be issued, and not for all the collectors' cash in the world would Ireland opt for a "Europa" set when a set had to be issued to mark the death of her patron saint. So St. Patrick had it, with a finely engraved set of three values, 3d., 8d., and 1/3d., and although a few hundred less may be sold those collectors who have the good taste to buy a set will have something infinitely more worthwhile. Well done, Eire. Such an issue, particularly under the circumstances, does you great credit.

REAL MONEY

I remember a B.B.C. commentator finishing up a talk, after visiting an exhibition, by remarking that there were even stamps on show for those whose youngsters were interested. I thought of that gem of factual reporting when I read that during the past twelve months the Bond Street, London, firm of stamp auctioneers had sold over one million pounds worth of stamps and that among the individual items disposed of, ten made, or even exceeded, £1,000. London, of course, is the world's centre for stamps as well as for rare pictures, etc., but a million pounds in one year by one firm makes you realise how important the cult of our hobby has become.

BEAUTIFUL STAMPS

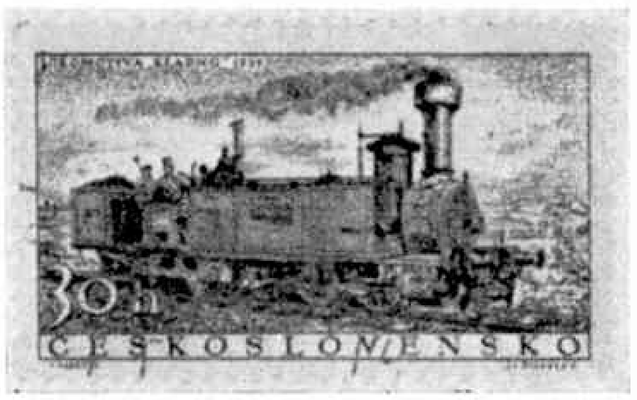
British people love flowers, which is probably the reason why stamps depicting flowers are so widely collected and why the 8d. stamp which Fiji issued recently, showing the exotic hibiscus, is still selling as hot cakes used to sell before the era of slimming. It is the second stamp which Michael Goaman has designed for Fiji. The first one (I think I mentioned it at the time) depicted a Kandavu parrot, and it actually won the international award for the most beautiful stamp issued by any country in Oceania during 1959. I wonder how this latest Fijian stamp will fare in that competition? Anyhow, the printers—Harrison and Sons—have done their best to make the stamp the success it undoubtedly is.

HERM ISLAND

It is claimed that Herm, the island just off Guernsey, has 100,000 visitors every year (no doubt some readers of these Notes have been among the throng). Of course, many of these visitors like to send postcards to friends during their stay there, but as there is no official post office on Herm the tenant of the island provides a service to Guernsey, and supplies stamps for the job. Well, these stamps were overprinted "EUROPA, September 18th, 1961." What a rush there has been for copies, by the many thousands of collectors who go in for "Europa" stamps. The demand has come mostly from Germany and the United States, although quite a few collectors here at home have bought sets, and those who bought (*Continued on next page.*)

By E. W. Argyle

Locomotives On Stamps



THE quaint locomotive "Kladno" was built in 1855 at the Vienna locomotive factory Maschinenfabric der Wien-Raaber Eisenbahn, its designer being Engerth. Its works number was 295. It was in service for more than 50 years on the Bustehrad-Kladno line, the highest permitted speed being 75 km. an hour. Length of the engine was 10.8 metres, and when empty the locomotive weighed 38.8 tons.

The Finnish Red Cross train is shown being drawn by Pacific-type locomotive No. 1001 of the Finland State Railways. The locomotive (class Hr.1) was built by Lokomo O.Y., at Tampere, Finland, in 1937. No. 1001 was the first of the type and was earlier marked P1. It is of 5 ft. gauge. Twenty-one locomotives of this class were built, the last, completed in 1957, being wholly equipped with roller bearings. Engine and tender together weigh 155 tons. Designed for passenger service, these locomotives will probably be the last steam types to be built in Finland.

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FOR OTHER STAMP ADVERTISEMENTS SEE ALSO PAGE 462

BACK NUMBER "M.M.s".

To clear small stocks still in hand of all issues December 1960 to November 1961 the price per copy has been reduced to 1/-, including postage etc.
Write to the Publishing Department, *Meccano Magazine*, Binns Road, Liverpool 13, enclosing a postal order for the appropriate amount.

Stamp Gossip—

(*Continued from previous page*)
them early have not done too badly.

HONG KONG

When we think of life in that far eastern island we mostly dwell on the lighter side, but there is a very serious side to it all and a $1 stamp issued September 11—and illustrated on the previous page—reminds us of that fact. (Don't be afraid; a Hong Kong dollar has only a face value of 1/3d. so a copy is not a costly item). The stamp came out to mark the Golden Jubilee of Hong Kong University, and it is an attractive item depicting the Arms of the University in full colours, even to gold; a clever bit of printing. The University was first incorporated in 1911, but during the Japanese occupation of the island, in the second world war, the building was badly damaged and its equipment destroyed. Now, all is well again. Today there are 1,400 students, and not only does the institution have a general library of 110,000 volumes, but there are also 115,000 in the Chinese library. To get back to the $1 stamp, a copy of this beautifully printed stamp will grace any collection. By the way, not only is Hong Kong to have another special issue of stamps shortly, but the present issue is soon to be replaced.

THE TIP OF THE MONTH

This brings me to my tip this month, which is to make sure that you have not only a full set of the present issue (used are a lot cheaper than mint) but all the fine shade varieties which exist also, for the stamps of Hong Kong are very popular. Such a lot of collectors seem to wait until a set is obsolete before getting round to buying it, and then of course the price has gone up. You have been warned.

Road and Track—

(*Continued from page 433*)
visited the halls. Highlight of the show will be a Formula I Ferrari similar to the car driven this year by world champion Phil Hill, and the revolutionary Ferguson racing car will be there as well. It will be recalled that Moss has put up some remarkable performances in the Ferguson this year, and it is a car that may well feature prominently in the 1962 race results.

B.R.M. will have one of their 1961 Formula I engines on view and it is hoped to make available one of the latest V.8 Coventry-Climax engines, Britain's hope for the 1962 championship. There will be sports cars as well, such as Porsche and Ferrari, and numerous stands where enthusiasts can find out all they want to know about performance from tuning experts like Alexander Engineering, Downtons, Derrington and Cosworth —the last named being responsible for some remarkable performance figures on the Ford Anglia 105 E engine.

With a cinema on the premises showing motor-racing films, this year's show is well worth a visit for those who have not been able to see previous exhibitions. The admission prices are 4/– for adults, 2/6 for children, and the show is open daily, except Sunday, from 10 a.m. to 9 p.m.

THE FORD CLASSIC

Although the stylish Ford Capri is still only available for export, the Classic is now a common sight on the roads of this country. As I have said before, Ford deserve full marks for putting disc brakes on a family car selling in the mass market, and the 9½ inch Girling discs are positive and quick in action.

The Classic is not a sports saloon; neither does it have to be treated as a sedate family saloon. It is somewhere between the two, bearing in mind that the 1340 c.c. power unit, developing 56·5 b.h.p. at 5,000 r.p.m. gross has to propel a fairly large body and an unladen kerb weight of 18½ cwt. The Classic has a longer stroke version of the 105 E Anglia engine, together with the excellent Anglia gearbox, and if the box is used intelligently this comfortable, well-equipped saloon, with its enormous luggage boot, can be hustled along in the 70's with complete confidence. At night the four-headlight system is exceptionally good and encourages high averages.

The Classic offers a choice of steering column or floor gear-change, and while I always prefer the floor type, this is a good column change with a very short and positive movement. But I shall never happily accept umbrella-type handbrakes, preferring the floor-mounted type on the right of the driver's seat.

Calling All Bus Spotters—

(*Continued from page 466*)
Society hold their own displays up and down the country. You can play your part too, for there are several types which have not yet been preserved. If you find an old vehicle about to be scrapped, please let me know immediately, and I will put one of these excellent societies on the scent. Urgently wanted are early Bedfords, ex-Midland Red QL, M and S.O.S. type of single-deckers, Bristol B and J types, a Daimler C.O.G5 double-decker, Dennis pre-war Lancet double-decker, a Guy six-wheeler and any Maudslay. Some of these may still be in the hands of fairground owners, or be in use as works vehicles. It is up to us to do what we can to prevent them all becoming merely a fading memory.

Repairing Punctures—

(*Continued from page 466*)
installation and operation of these machines—they are afraid of being dispensed out of business!

Along the banks of the Hudson River, enterprising firms have recently installed machines which provide quantities of bait wrapped in paper! And in most American cities newspapers and magazines are obtainable from slot machines.

Before long, perhaps, we shall be able to obtain a ticket for Mars—from a slot machine!

Calling All Bus Spotters

THERE are now officially 81 old buses, coaches and trolleybuses preserved in Great Britain. They vary in age from a 1904 Thames Ironworks bus (XM 215), which is in the safe keeping of a private individual—Mr. H. Goody—to a 1939 Leyland "Cub" of the London Transport CR class (FXT 120) which is housed in the B.T.C.'s new museum at Clapham, London.

Although Leyland predominate with examples of their G7, Lioness, Lion, Titan, Bull and Tiger chassis, there are many makes which are no longer on the market. For instance, the Vintage Passenger Vehicle Society has under its protection a 1924 Reo Speed Wagon (MR 3879) and a 1931 Reo Gold Crown (AG 6740). Likewise the V.P.V.S. looks after two Gilfords (GW 713 and JR 3520), which were a very popular make of coaches in the years 1925–35.

Thornycrofts still make fire engines and other vehicles at their Basingstoke factory, but no longer produce buses or coaches, so it is refreshing to note that Portsmouth Corporation still have their J model double-decker (BK 2986) of 1919 vintage. The two Austin 22 h.p. single deckers with their loads of 13 passengers each, which used to climb Sidmouth Hill in pre-war days (UO 1477 and UO 2331) have also found suitable homes—the former with the V.P.V.S. and the latter with the Shears Vintage Vehicle Collection at Exeter. Ransomes of Ipswich are represented by their DX 8871, a single-decker trolleybus which operated in its native city until a few years ago, and is now with the B.T.C. relics at Clapham.

By David Kaye

Some of the vehicles are quite well known among transport fans. For instance, there is the 1910 L.G.O.C. "B" class double-decker "Ole Bill", which I mentioned in the October *M.M.* Another London relic of note is the London United Tramways trolleybus No. 1 (HX 2756)—known as a "Diddler"—which ran in the Kingston-upon-Thames area from 1931 until replaced by a Q1 class vehicle in 1948. Although most of these vehicles lived through the heat of the day on public routes, some have had a more restful life. Such a one was the 20-seater Thornycroft A2 UY 6596, which belonged to the Worcester College for the Blind. Lord Lonsdale was the original owner of two early Commers—EC 934, a 20 h.p. model of 1909, with seating for eleven passengers, and BM 2856, a 25 h.p. WP3 model of 1913, seating fifteen. They were doubtless used on his lordship's extensive estates.

Portsmouth's famous 1919 Thornycroft "J" type double-decker BK2986 pictured at a Brighton rally. Photograph by Surfleet Transport Photographs.

* * * *

When can you see these vehicles? Firstly, you can visit places such as the Montague Motor Museum (where Ford model TT EP 1673 and Portsmouth A.E.C. 661T RV 4649 are kept), and the B.T.C. Museum in London. Secondly, an increasing number of rallies are being held. Sometimes vintage vehicles appear at the annual Brighton Coach Rally, which takes place late each spring. However, the V.P.V.S. and the Lincolnshire Vintage Vehicle (*Cont. on previous page*)

REPAIRING PUNCTURES—FROM A SLOT MACHINE

WHEN you take a bar of chocolate from a slot machine on the railway platform, do you ever wonder who invented these clever mechanisms? Although there are no records concerning the originator, the German Health Authority erected a butter machine in Berlin in 1881. On rolling a coin down a chute, a small pat of butter was dispensed, neatly wrapped in tinfoil.

In Lubeck, Germany, a slot machine offers horoscopes for a shilling—and if you pop an extra threepence in you are given a card stating not only your name and address but the most suitable career for your qualifications! Recently, this machine was adapted to dispense train numbers and descriptions of all German trains. It is, needless to say, a source of constant enjoyment to train spotters.

By Kenneth Rawnsley

Cold feet can now be easily remedied, all because a doctor in Innsbruck, Austria, has invented a cold feet warming dispenser. You stand on a rubber mat, drop sixpence through a slot and, as a red light comes on, a tray emits ultra short-wave radiations at intervals of one every eleven seconds, restoring circulation to the entire body.

When milk and hot drink machines were introduced here we thought we were living in a super age, but to find the latest in slot machines one has to go to the United States. Why, in New York's Grand Central Station one machine even dispenses insurance policies! Another, in Kansas City, ejects hamburgers while in Vancouver, Canada, there is a machine which ejects safety pins, toy bricks, babies' nappies, parts for constructional sets, fresh flowers neatly tied in bunches, greetings cards, nylon stockings, toothpaste—a liberal amount on a cardboard brush!—and boiled eggs.

In Saskatchewan is a slot machine which makes it possible for cyclists and motorists to repair punctures without the necessity for carrying tools and supplies around with them. At a cost of two shillings, a complete puncture kit is supplied, together with tyre levers. Similarly, a machine in a Chicago railway station supplies hot water and soap for washing. The addition of a small coin supplies paper towels.

On the Canadian National Highway, at regular points, air dispensers are erected. Insertion of one shilling enables motorists to pump air into their tyres. Before the war, petrol was obtainable in some parts of Australia—pumped into automobile tanks from slot machines. They were constructed rather like ordinary petrol pumps, but were fitted with specially-guarded slots through which the coins were inserted. Some American all-night garages now use this device. And in New Zealand, a special slot machine issues letters to creditors and furnishes legal advice! By popping a coin in the slot you can learn what to do when anyone owes you money. So popular has this machine become that some lawyers are seriously contemplating putting forward legislation to prevent the (*Cont. on previous page*)

Hornby Railway Company—

(*Continued from page 457*)

its livery of I.C.I. transport blue, to use the official title, with the wording *Bulk Salt* and the characteristic I.C.I. emblems.

Another Hornby-Dublo newcomer is the No. 4652 Machine Wagon, representing a special type of four-wheeled vehicle familiar, in various forms, on railways for many years. The code name *Lowmac*, so useful for working reference, implies its low build, and its purpose. The centre section of the vehicle is depressed, much like that of a bogie well wagon, so that it can carry bulky loads which might otherwise exceed the loading gauge.

The Hornby-Dublo Machine Wagon *Lowmac* is essentially a once-piece moulding. The stout side girders supporting the "deck" of the wagon are modelled in excellent detail. The upper part of the miniature wagon forms an excellent reproduction of the deck of the real thing, with the floor planks running crosswise.

The Hornby-Dublo Machine Wagon is coloured in bauxite brown and in view of its low-built character the moulded spoked wheels are of smaller diameter than the standard ones.

Further welcome news for Hornby-Dublo Two-Rail owners is the appearance of No. 2460 Level Crossing, for single track, so that road and railway can cross one another, with interesting and realistic effect. The Level Crossing consists of a moulded base, concrete in colour. Mounted on the base are two pairs of gateposts, each pair with a single gate that can be swung across the roadway or the railway. Gates and posts are finished in white, each gate having a characteristic red warning disc in the centre.

The base is shaped to provide a sloping approach for the roadway on each side of the track, and two standard rails, equal in length to a Straight Two-Thirds Rail, with a moulded representation of the usual built-up crossing between them, form the running lines. These are situated in a channel or recess in the base, so that the Level Crossing does, in fact, live up to its name.

The Set of Gradient and Mile Posts now available provides you with a total of 12 of these useful lineside items. Mile Posts showing respectively quarter, half and three-quarter mile markings are included, as well as one marking a full mile. The Gradient Posts cover several situations such as change from level to an ascent, change from level to a descent, a summit, the bottom of a dip, and the intermediate changes, ascending and descending.

For station platforms, and for the surroundings of the railway generally, the Dublo Dinky Toys range now includes the eleven pieces of No. 052 Railway Station Passengers. There is no space now to give you "personal" details of these lifelike little people, but I must endeavour to do so at a later date. They are illustrated in the advertisement pages.

Air News—(*Continued from page 437*)

wheels, climb to a high altitude and then open up its two de Havilland Gyron Junior turbojets for many minutes of valuable research at speeds of between 1,500 and 2,000 m.p.h. This is equivalent to 2½-to-3 times the speed of sound.

At such speeds, even in the intense cold of the upper atmosphere, air friction will heat the aircraft's skin to a temperature of as much as 280 degrees C. To withstand this, it is built almost entirely of stainless steel and there is a large-capacity refrigeration system to keep the pilot cool. For the record, the Bristol 188 is 71 feet long and spans 35 ft. 1 in.

Drilling the Mohole—

(*Continued from page 427*)

necessary to protect it from bending by having a bell-shaped guide fixed to the bottom of the ship, and another guide pipe at the sea-bed (see diagram at the foot of page 427). These guides, together with the outboard motors, proved successful in the recent trials, and holes 600 feet or more in depth were drilled into the sea-bed.

One thing could not be done during the trials—it was not possible to change the drilling bit when it wore out. In order to do this, it would have been necessary to haul the bit to the surface and replace it by a new one. But if this had been done, it would have been impossible to find a small, eight-inch hole at the bottom of the ocean! Therefore, the distance the drill could penetrate into the sea-bed was limited to the life of one drill bit. Even with the diamond cutting bits—which are used for drilling hard rock—the depth that can be drilled with one bit is only a few hundred feet.

If we want to be able to change the drill bit in order to go on drilling deeper, it will be necessary to have a tube joining the ship to the sea-bed. We can then slide the drill pipe up and down the tube. But such a tube will be very heavy, and its weight would be more than *Cuss I*—which was the name of the ship used in the experiments described—could support. However, all the information needed for planning a much larger drilling ship has been obtained, and the next stage in the Mohole experiment will be in a few years' time, when this special ship has been constructed.

One other special tool was tried during the experiments. This was a turbo-drill, which has a turbine motor held at the bottom of the bore-hole. The turbine is driven by water pumped down the drill pipe, just as the modern dentist's drill works. The advantage of this type of drill is that the drill pipe does not have to be rotated and so there is no risk of the pipe twisting off and breaking. In addition, the turbo-drill can cut more quickly than the ordinary one.

Other improvements in drilling are being considered. For instance, when a hole from which it is possible to extract a bit is several miles deep, it takes hours to haul the drill pipe out in order to fit a new drilling bit. At the present time use is made of a block and tackle, like a crane, to pull the drill pipe up. A new idea is to use a hydraulic lift which will extract the drill pipe from the hole three times as quickly as in the past. Then again, diamond drill bits are being made so that they will last much longer. There is no doubt that all the new ideas connected with drilling will help in the collection of a sample of the rock from which the mantle is made.

Meccano Boring Machine—

(*Continued from page 453*)

No. 59; 2 of No. 62a; 2 of No. 63; 1 of No. 63d; 4 of No. 70; 2 of No. 73; 1 of No. 77; 2 of No. 79a; 8 of No. 89; 16 of No. 90a; 46½" of No. 94; 5 of No. 96; 3 of No. 96a; 1 of No. 103a; 2 of No. 103h; 1 of No. 110a; 3 of No. 111; 8 of No. 111c; 2 of No. 115; 1 of No. 118; 2 of No. 124; 1 of No. 125; 2 of No. 133a; 1 of No. 140; 1 of No. 143; 1 of No. 146; 1 of No. 166; 1 of No. 171; 1 of No. 173a; 2 of No. 188; 18 of No. 189; 1 of No. 190; 4 of No. 190a; 4 of No. 191; 1 of No. 211a; 1 of No. 211b; 4 of No. 224; 4 of No. 226; 4 of No. 230; 4 of No. 231; 1 E15R Electric Motor.

ANSWERS TO CHRISTMAS PUZZLES

72 Christmas Cards.

* * * *

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7 inches.

SOLUTION TO CROSSWORD PUZZLE

Across

1. Shoe, 8. Party games, 9. Election, 10. Less, 12. Oblate, 14 Lesson, 15. Greece, 17. Strike, 18. Tyro, 19. Caroline, 21. Cinderella, 22. Pipe.

Down

2. Holly berry, 3. Epic, 4. Arrive, 5. Hymnal, 6. Bad loser, 7. Uses, 11. Stocking up, 13. Aneroids, 16. Encore, 17. Stroll, 18. Tact, 20. Leap.

TWELVE FAMOUS MEN

1. Dexter; 2. Edison; 3. Salvadori; 4. Statham; 5. Brindley; 6. Shackleton; 7. Pointer; 8. Bogarde; 9. Springett; 10. Sinatra; 11. Marconi; 12. Amundsen.

WELL-KNOWN PROVERB

You can take a horse to water, but you can't make it drink.

FIND THE PORTS

1. Southampton; 2. Bombay; 3. Heysham; 4. Glasgow; 5. Valparaiso; 6. Portsmouth; 7. Dieppe; 8. London; 9. Holyhead; 10. Copenhagen; 11. Bristol; 12. Liverpool; 13. Ostend; 14. Cape Town; 15. Singapore.

Fireside Fun

'Now, while we sing 'While Shepherds Watched', you beat the rhythm out on the door knocker.''

"And what will you do, my dear, when you are as big as your mother?"

"Diet," said the little girl.

* * * *

A bachelor, whose landlady was supposed to mend his clothes, grew tired of finding his pyjamas always without buttons. In despair, he pierced the lid of a cocoa tin and sewed it to his pyjama jacket as a hint.

When the jacket was returned, he found the lid still there, and opposite it a button-hole of equal size.

* * * *

"How many times a day do you shave?"

"Oh, forty or fifty times."

"Are you crazy?"

"No, I'm a barber."

* * * *

"Your last answer is wrong," the arithmetic teacher told Tommy. "You must stay behind."

Tommy glanced at the clock. "How much is the answer out, sir?" he asked.

"Fivepence too little," was the reply.

Tommy put his hand in his pocket and produced fivepence. "I'm in a hurry, sir," he said. "Do you mind if I pay the difference?"

Mother, sending small boy off to birthday party— "And don't forget —when the party is over, go up to Lucy's mamma and apologise."

* * * *

Exam. Howlers

A vicar is a man who turns Misses into Mrs.

* * * *

An officer grabbed a soldier by the shoulder and said, "Julius, that's Boadicea. Get her." He did, and so became known as Julius Cæsar.

* * * *

The Scilly Isles became known by that name because Queen Elizabeth I annexed them to the Duchy of Cornwall after buying them. This was silly because they produce lovely lobsters.

"Hullo! How's Tricks?"

Back from a sight-seeing holiday in Egypt, a woman tourist was showing her souvenirs. "I bought this scarab from an Arab boy, who assured me he had stolen it himself during excavations in the temple," she said. "I'm sure it must be genuine, because the boy had such an honest little face."

* * * *

"I'm glad the world is filled with sunshine."

"An optimist, eh?"

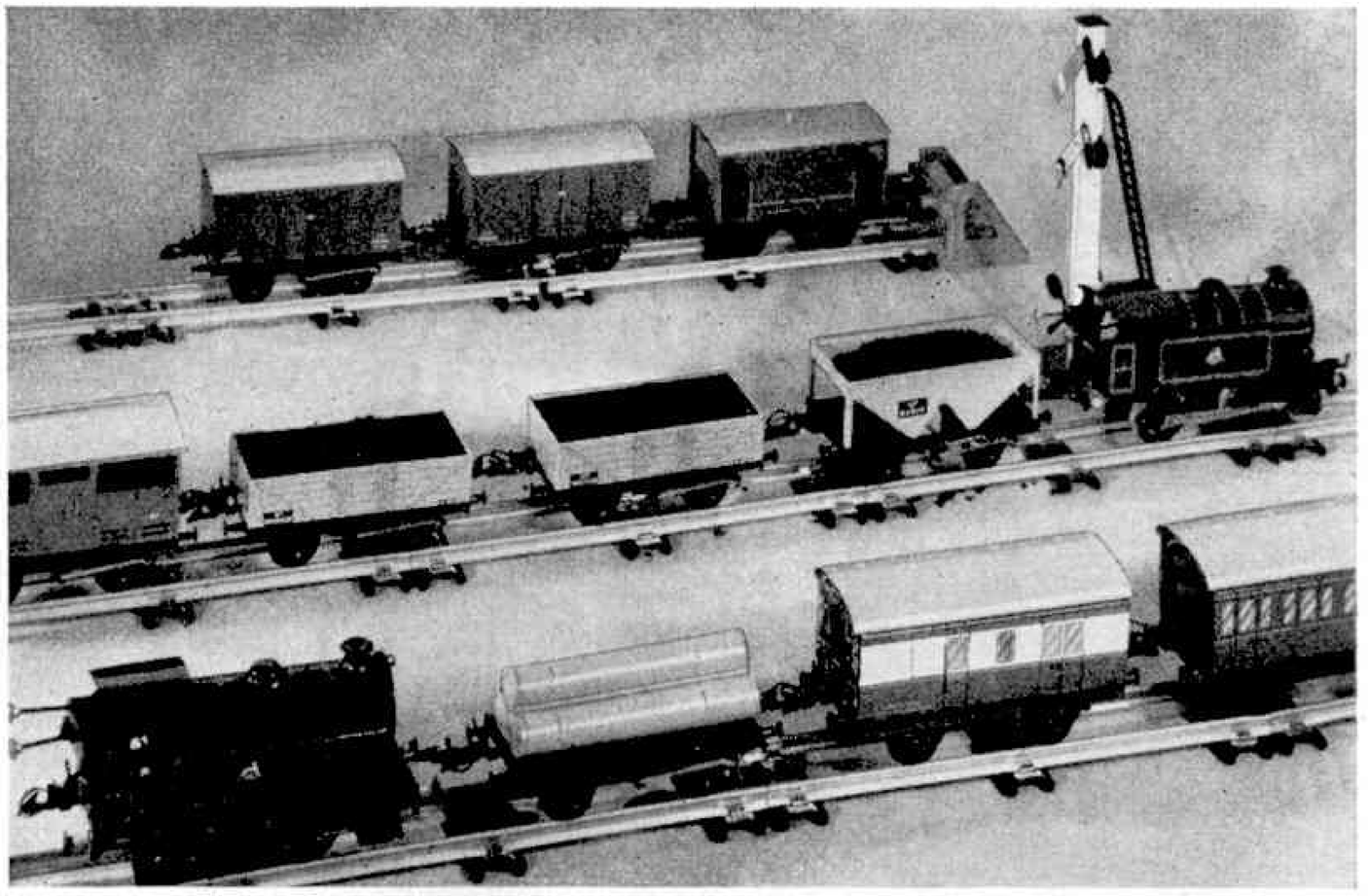
"No, a straw-hat salesman."

"Tommy Dodd" Chats About:

PACKING CASES

FROM time to time in these pages we have had a talk about loads for the Wagons on your Hornby Railways and I have given suggestions as to how suitable loads can be arranged, using coal or some similar raw material, bits of wood, card and all sorts of odds and ends that can be found about the house. What I may call loose loads, such as stone or coal, are easy enough to fix up, whether you use the real stuff or the Imitation Granite Chippings (No. 790) or Imitation Coal (No. 791) that have been available in packets for some time. What is not always so easy is to make a neat and convincing job of modelling such items as the cases in which so many different things are carried by road and rail.

Fortunately you will now be spared this trouble, as the recent introduction of miniature Packing Cases, No. 792, provides exactly what you want. The Cases are attractive mouldings in self-coloured plastic having a realistic "wooden" appearance. They are light in weight, which is always an advantage in loads on railways where clockwork forms the motive power. I am sure that their neat and attractive appearance will appeal to you, whether you load them into your Hornby Wagons or whether they are merely placed on your loading bank or goods platform to help give a busy air to the scene generally.



As you can see from the picture, making use of Imitation Coal adds considerably to realism on a layout. No. 40 Hornby Tank Locomotives are hauling up and down trains—one goods and one passenger.

No doubt the younger members of the railway staff will soon discover that one side of each Case is removable! It fits quite tightly, however, and is not likely to come loose during transit.

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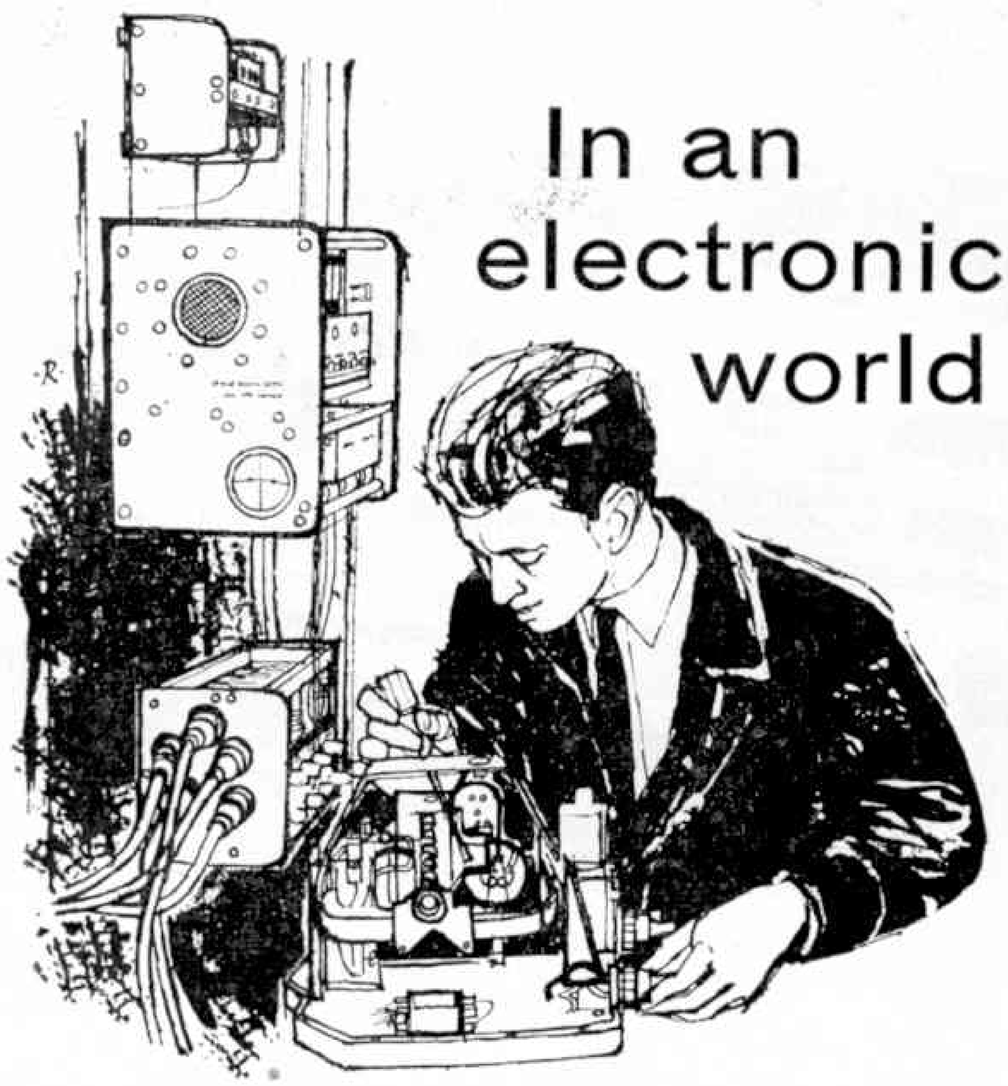

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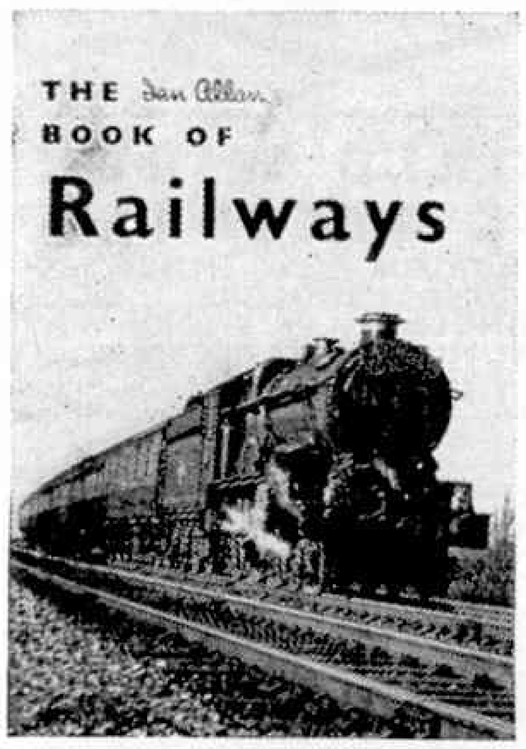

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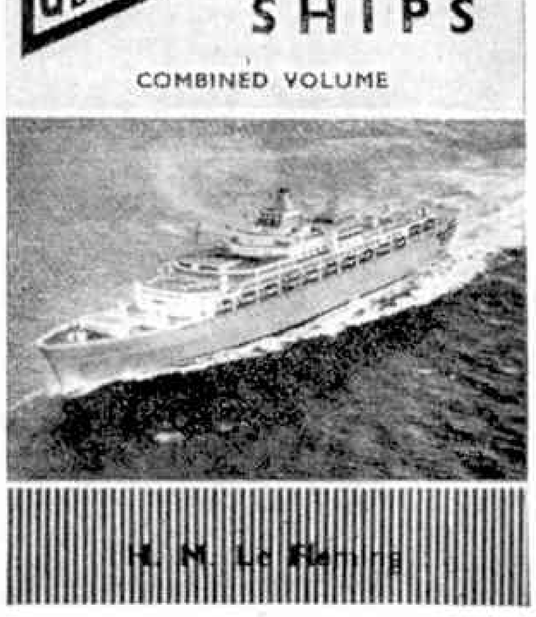

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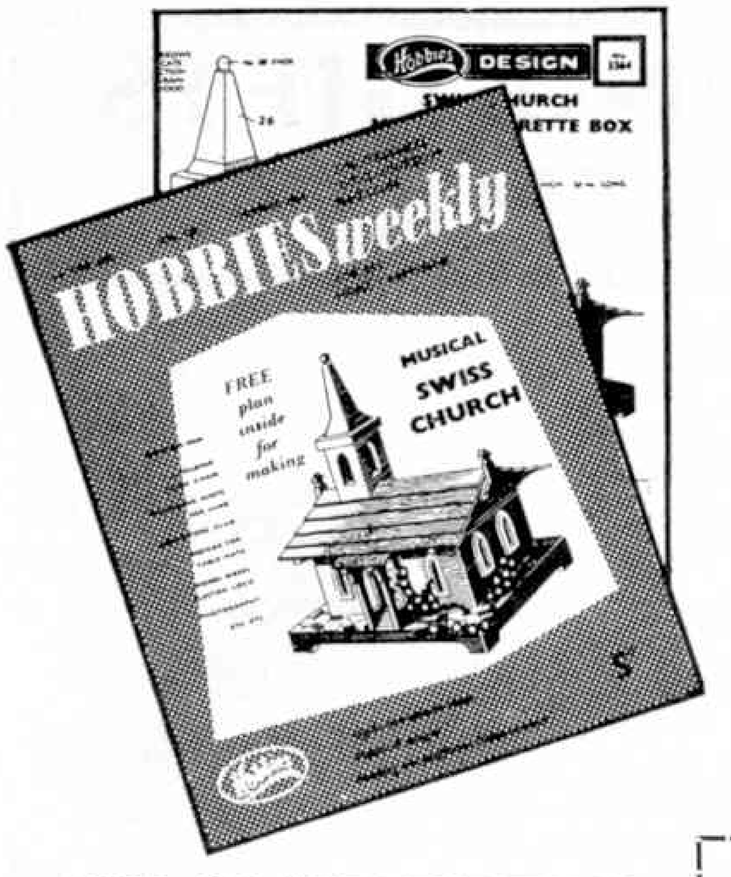

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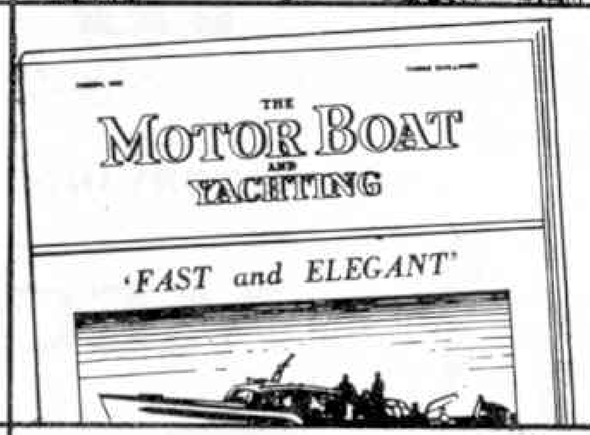

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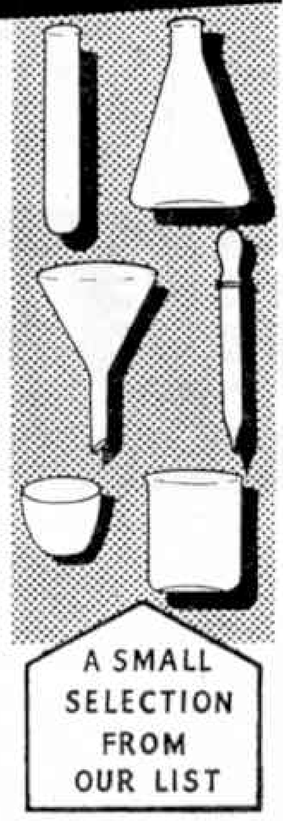

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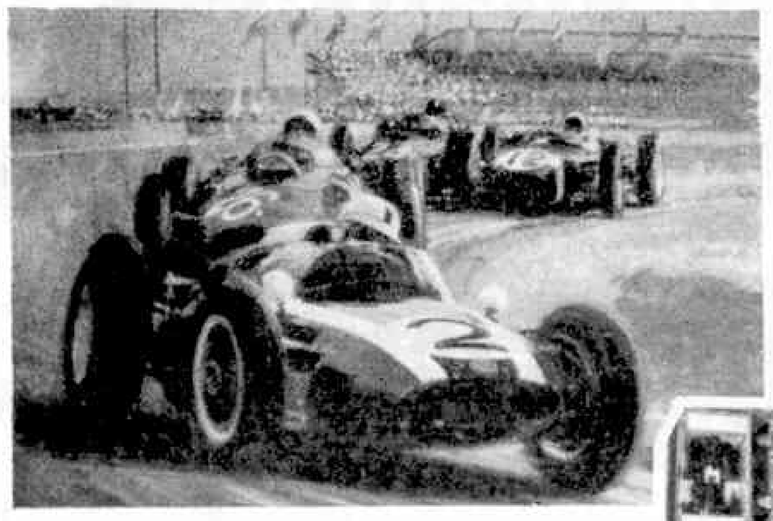

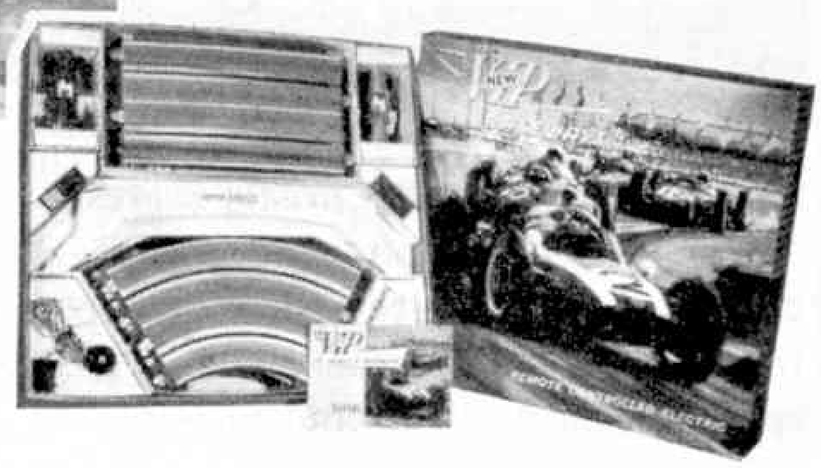

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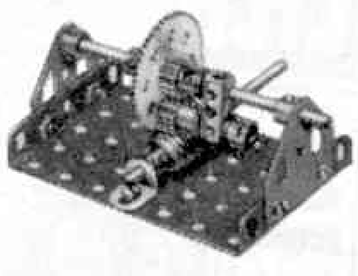

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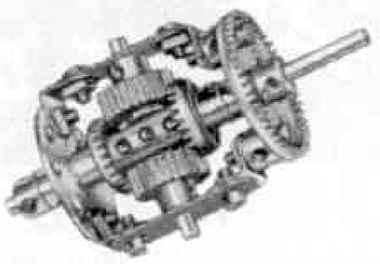

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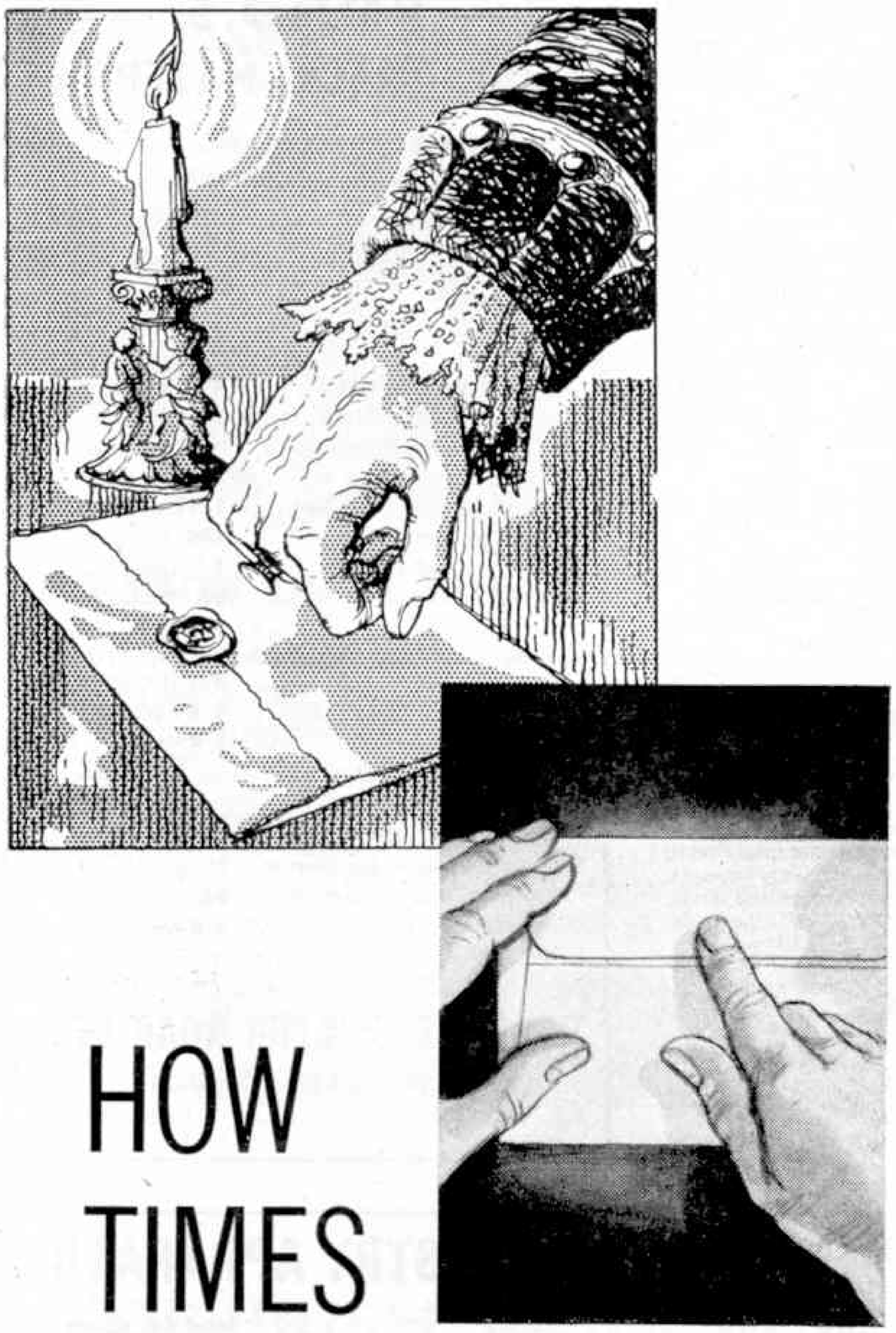

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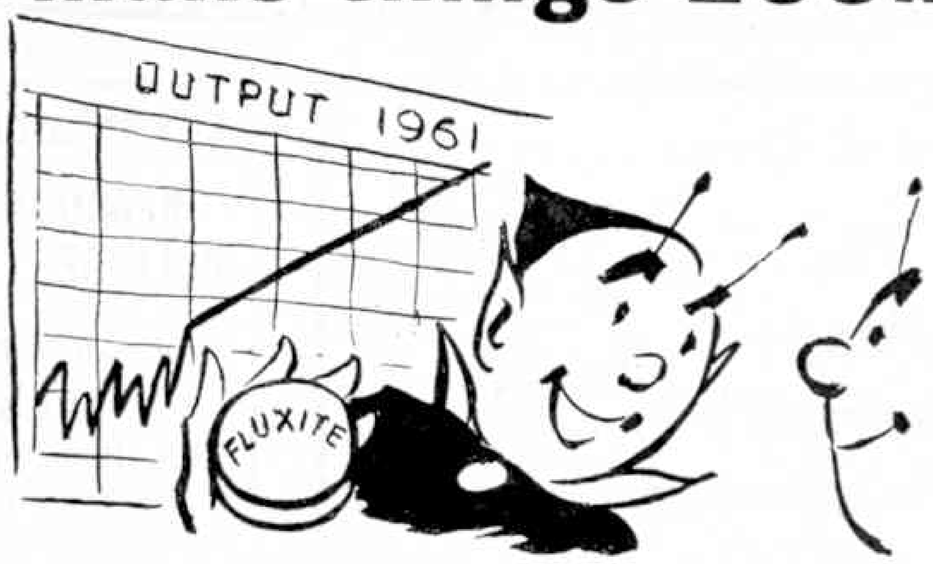

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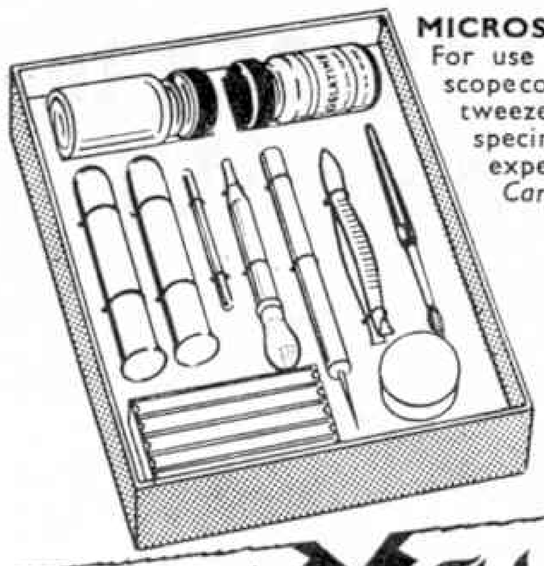

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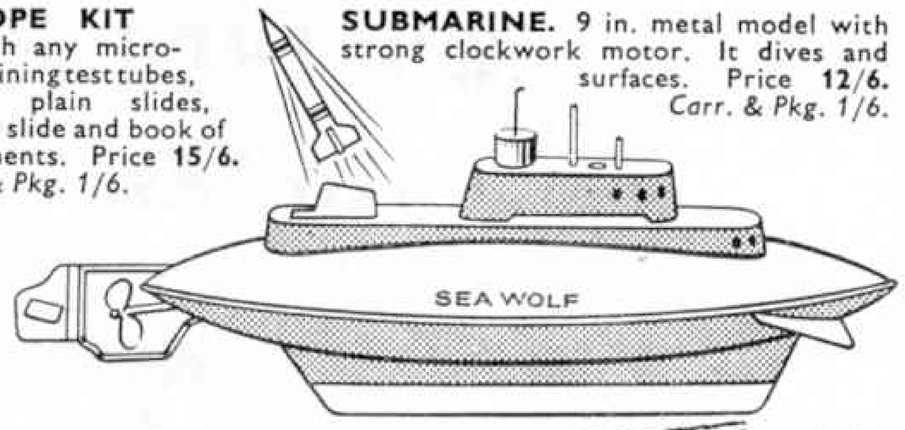

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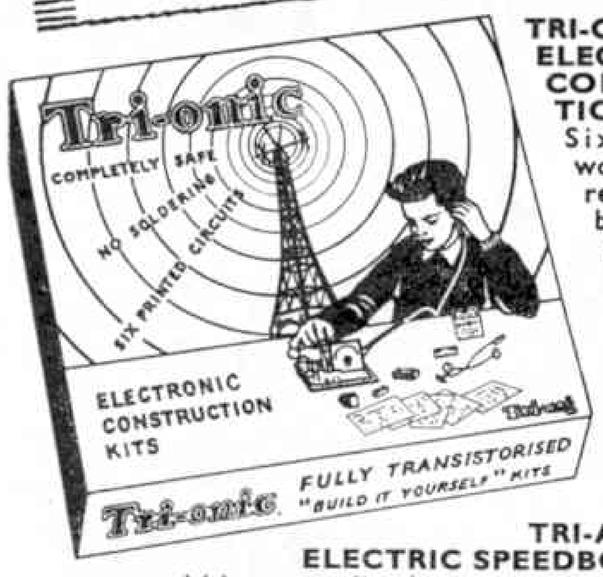

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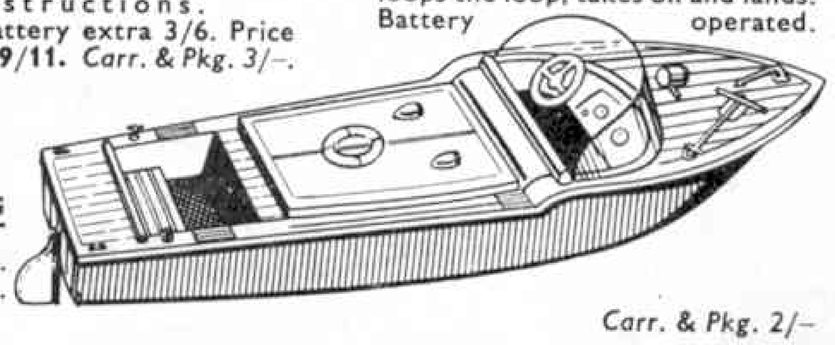

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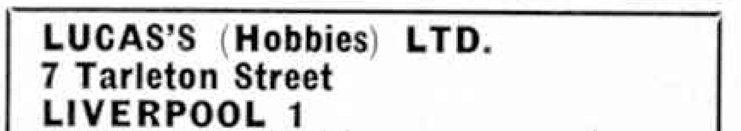

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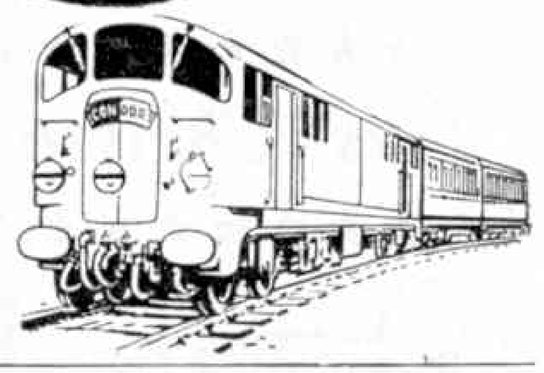

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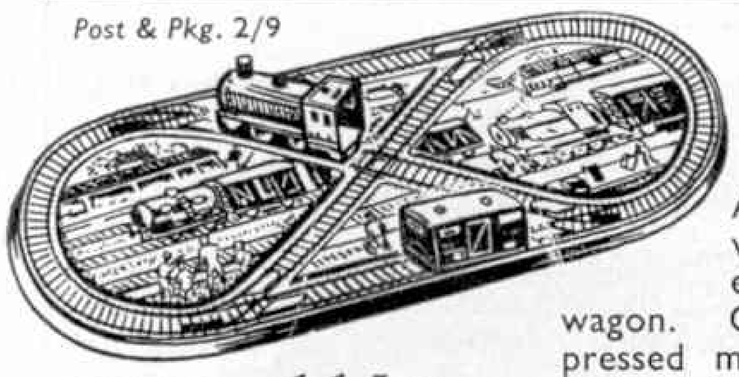

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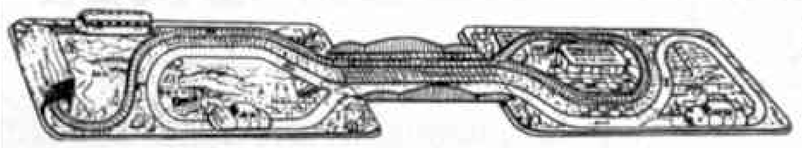

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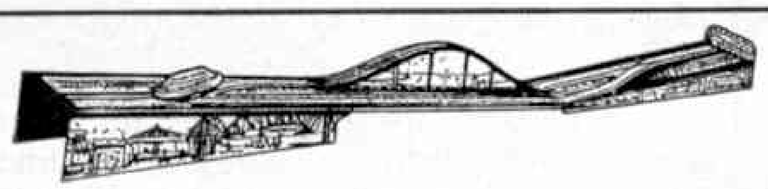

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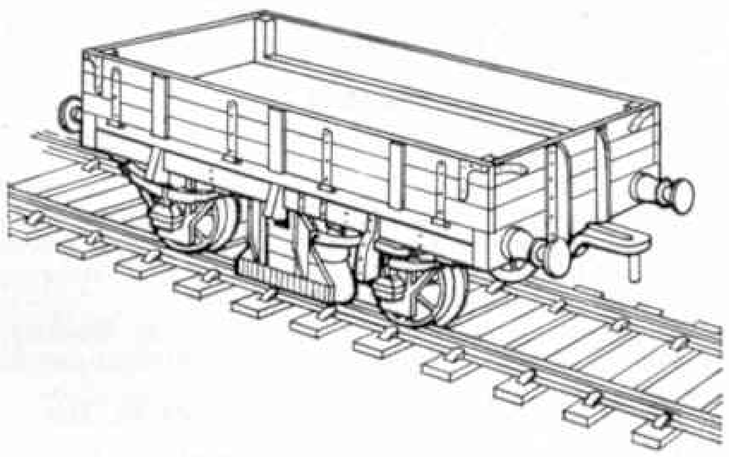

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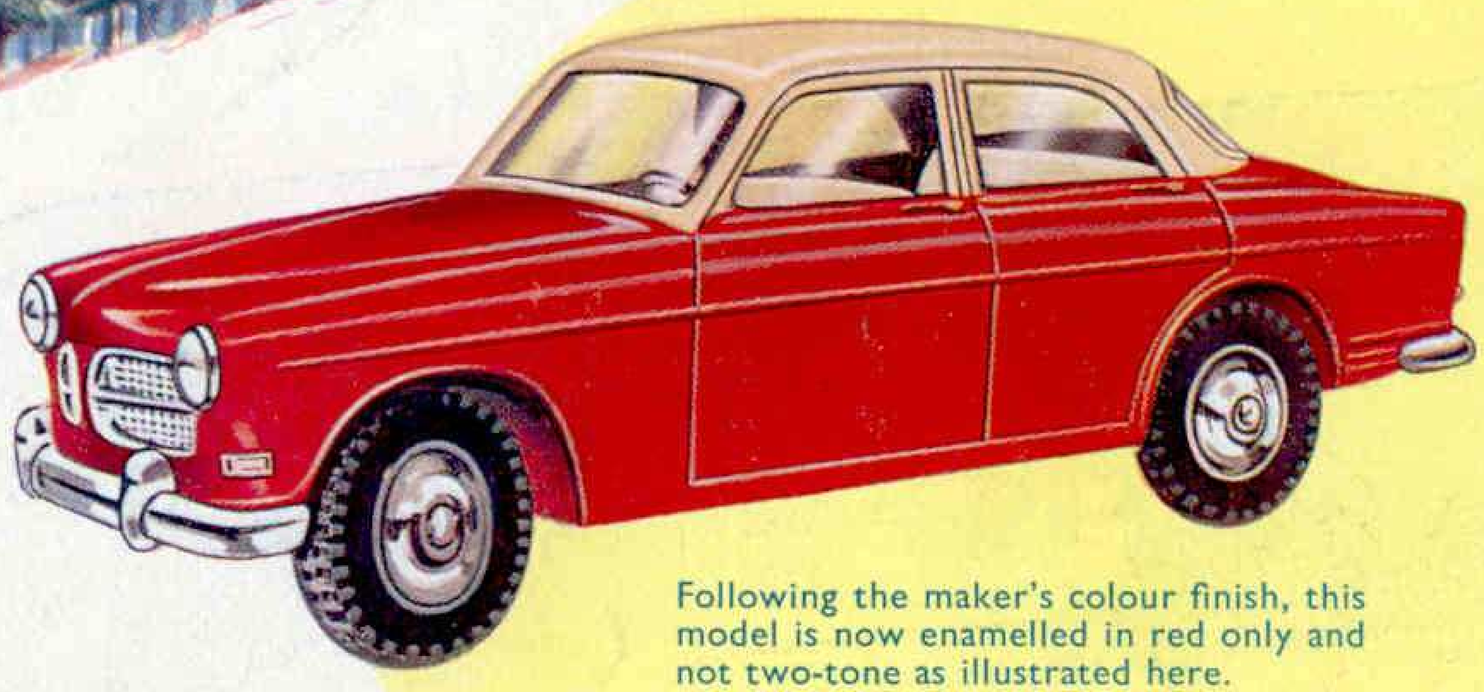

Following the maker's colour finish, this model is now enamelled in red only and not two-tone as illustrated here.

NEW

DINKY TOYS No. 184—VOLVO 122S

Now you can own a perfect model of the Volvo 122S—a popular and attractive saloon from Sweden. It is die-cast in solid metal with four-wheel suspension, seating and windows. Additionally it has finger-tip steering—an original Dinky Toys refinement. Slight pressure on either side of the model pivots the front axle, enabling it to be steered to the left or right. Here is a magnificent model every collector will want to own.

Length $3\frac{13}{16}$ in.

U.K. Price **4/6**

An impression of the Volvo 122S saloon, already a familiar vehicle on British roads.

DINKY TOYS

PRECISION MADE BY MECCANO LIMITED

AVAILABLE LATER OVERSEAS

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